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Conference of State & Provincial Health Authorities of North America

Proceedings

of the

Conference of State and Provincial Boards of Health of North America

1916

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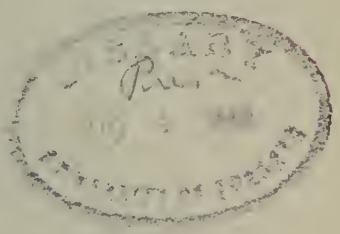

PROCEEDINGS

OF THE

THIRTY-FIRST ANNUAL MEETING

OF THE

CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA

HELD AT

WASHINGTON, D. C., MAY 15, 1916

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The meeting was called to order by Dr. E. G. Williams, of Virginia, the President.

ROLL-CALL

The following Provinces and States answered to the roll call:

Manitoba	Dr. Gordon Bell.
United States Public Health Service	Dr. L. L. Lumsden.
	Dr. Joseph Goldberger.
	Dr. J. W. Kerr.
	Dr. John William Trask.
California	Dr. Wilbur A. Sawyer.
Connecticut	Dr. John T. Black.
Delaware	Dr. A. E. Frantz.
District of Columbia	Dr. Wm. C. Woodward.
Hawaii	Dr. B. S. Bowman.
Indiana	Dr. James H. Boyers.
	Dr. Charles W. Kern.
	Dr. J. N. Hurty.
Kansas	Dr. Chas. H. Lerrigo.
Louisiana	Dr. W. H. Seeman.
Maryland	Dr. C. Harrington Jones.
	Dr. John S. Fulton.
Massachusetts	Dr. A. J. McLaughlin.
	Dr. E. R. Kelley.
Michigan	Dr. John L. Burkart.

Minnesota	Dr. H. M. Bracken.
	Dr. A. J. Chesley.
	H. A. Whittaker.
Mississippi	Dr. W. S. Leathers.
Montana	Dr. W. F. Cogswell.
New York	Dr. John A. Smith.
North Carolina	Dr. W. S. Rankin.
Ohio	Dr. James G. Bannann.
Rhode Island	Dr. T. J. McLaughlin.
	Dr. G. T. Swarts.
South Carolina	Dr. James A. Hayne.
Vermont	Dr. C. F. Dalton.
Virginia	Dr. E. G. Williams.
Washington	Dr. T. D. Tuttle.
West Virginia	Dr. W. W. Golden.
	Dr. S. L. Jepson.
Wisconsin	Dr. W. F. White.

Others present were:

Dr. John A. Ferrell, Assistant Director General, International Health Commission, New York City.

Miss Gertrude Seymour, *The Survey,* New York City.

Dr. T. R. Crowder, Director, Department of Sanitation and Surgery, The Pullman Company, Chicago.

Mrs. William Goodrich Beal, National Child Welfare Exhibit Association, New York City.

The program presented was as follows:

PROGRAM

President's Address: DR. ENNION G. WILLIAMS.
Report of Secretary-Treasurer: DR. W. S. RANKIN.
Appointment of Committees:

(1) Auditing Committee.
(2) Committee on Nominations.
(3) Committee on Resolutions.
(4) Committee on Publicity.

Roll-call by Provinces and States.
Reports of Special Committees on

(1) **Conservation of Vision:** DR. G. T. SWARTS, chairman; DR. M. M. SEYMOUR and DR. J. C. PRICE.
(2) **Pellagra:** DR. J. A. HAYNE, chairman; DR. H. L. HARRIS and DR. JOSEPH GOLDBERGER.
(3) **Relation of Federal and State Authorities in Sanitary Regulation of Common Carriers:** DR. E. R. KELLEY, chairman; DR. C. G. MCGURREN and DR. J. W. MCCULLOUGH.

(4) **Model State, District, and County Health Laws:** Dr. J. H. Sumner, chairman; Dr. S. J. Crumbine and Dr. Joseph Y. Porter.

(5) **Course of Study in Sanitation for Women's Clubs:** Dr. S. J. Crumbine, chairman; Dr. Frederick R. Green and Mrs. W. A. Johnson.

(6) **Recent Advances in Sanitary Laws, Organization, and Practices:** Dr. John L. Burkart, chairman; Dr. A. J. Chesley and Dr. J. C. Price.

(7) **Postal Aid to State Health Work:** Dr. John S. Fulton, chairman; Dr. A. G. Young and Dr. J. N. Hurty.

ADDRESSES AND DISCUSSIONS

(1) **Fundamental Distinctions Between Federal and State Health Policies:** Dr. Oscar Dowling.

(2) **Fundamental Distinctions Between State and Local, County and City, Health Policies:** Dr. J. N. Hurty.

(3) **Extent and Method of State Control in County Health Work:** Dr. W. S. Rankin.

(4) **Salvarsan as a Public Health Agency:** Dr. A. J. McLaughlin.

SYMPOSIUM ON CONTROL OF COMMUNICABLE DISEASES

(5) **Best Method of Disinfection After Tuberculosis, Whooping Cough, Typhoid Fever, Scarlet Fever, Measles, Diphtheria, and Smallpox:** Dr. A. J. Chesley.

(6) **Minimum Quarantine and Degree of Isolation in Measles, Whooping Cough, Diphtheria, Scarlet Fever, Smallpox, and Mumps:** Dr. Charles F. Dalton.

(7) **What Can be Done Through the Schools in the Prevention of the Communicable Diseases:** Dr. L. R. Williams.

(8) **Differences in Method of Control of Communicable Diseases in Urban and Rural Communities:** Dr. John S. Fulton.

PRESIDENT'S ADDRESS

Some Remarks on the Present Status of Public Health Work

Dr. E. G. Williams, Virginia

In this year 1916, there is more reason than ever why our conference should pause to consider the public health situation, its opportunities and its responsibilities. Nearly all of the civilized world is at war, the aim of which is destruction. The inventive geniuses of the nations are devising methods by which human life can be most effectively destroyed. The United States, represented so largely in this Conference, now stands as the most influential nation in upholding the civilization of the world, and this Conference represents the activities of the component units of the

nation in the conservation of human life. The development of the agencies for conserving the health and strength of our fellow beings is our responsibility.

Our generation has witnessed greater changes than any other in the history of the world. Every line of human endeavor has been revolutionized by the discoveries and inventions of our time. In no line, however, has there been greater development than in ours—the conservation of human life. We have seen public health work undergo a metamorphosis from well-meaning, ill-defined and semi-superstitious practice to the basis of an exact science, characterized by methods of precision. It has not been long since epidemics were combated by such measures as the sprinkling of lime and copperas along the streets and white-washing the mouths of sewers.

It behooves us as the executives of health departments to be duly appreciative of the recent discoveries and to change and reorganize our methods and forces in order to secure a maximum degree of efficiency in the practical application of the new knowledge.

We have witnessed the evolution of the duties of a board of health. At first they embraced all those duties that a graduate of medicine could render the public by reason of his special knowledge, such as looking after epidemics, the treatment of contagious diseases, the care of indigents at their homes and in institutions, the care of prisoners in jails, and the examinations of candidates for license to practice medicine. As so little was known about causes of diseases, slight attention was paid to improving sanitary conditions except at the time of an epidemic. With increase in knowledge, there has naturally come the specialization of official duties and a more definite limitation of the duties of the board of health. There has been separately organized out of the board of health the Board of Charities and the Board of Medical Examiners.

One of the most hopeful signs of the times is the awakened appreciation on the part of the people as to what public health work means to them. They are taking a more active part in developing the agencies for promoting good health. As individuals and in organizations and corporations they are actuated not only by humanitarian motives, but also by good sound business principles. In witness of this we see the organization of the Life Extension Institute, the interest of life insurance companies in public health, and the building of model mill and mining towns.

It is being realized that preventive medicine is an independent science, having much in common with the practice of medicine, but covering also many things not taught in medical schools and not practiced by physicians. Many of our best health workers are not graduates of medicine. So great has the field of prevention developed in its intensity and variety that there are specialists in public health of widely different training, and health workers whose labor differs

widely in skill. The diagnostician and the medical school inspector must have the education of a doctor of medicine. The sanitary engineer, an essential factor in state health work, must have training in a technical school. The bacteriologist and the epidemiologist are not efficient because of their expert knowledge of medicine or engineering—the one must be an expert in biology and laboratory technique, while the other must combine with the same kind of knowledge a great deal of those qualifications more commonly associated with the work of a detective, while the head of the department should have considerable training along all the above lines, and also the same kind of executive ability demanded for leaders in any line of activity.

Public health work, having for its object the prevention of sickness and raising the standard of health, is far reaching in its scope. There are few things that do not in some way affect the health of the people and their tendency to sickness. It is manifestly impossible for a health department to attempt to regulate all those factors which may be even vitally concerned in the prevention of sickness. It must confine itself to the more direct factors. Pasteur gave the keynote for modern health work when he, reflecting on the epoch-making discoveries of himself and others, declared that "It is possible to make all parasitic diseases disappear from the earth." It has been with this as a corner-stone that our health departments have been reconstructed. The amount of sickness and the number of deaths due to parasites constitute a very large part of the total. The prevention of parasitic diseases would seem to be a field sufficiently large for the activities of one department of the State government.

These diseases vary in their prevalence and in our ability to prevent them. Fortunately, however, there are certain characteristics common to nearly all the disease-producing parasites with which the health officer has to contend, namely; they multiply and proliferate practically only in the human body and weaken or perish soon after leaving the body. We can thus build upon the premise that a communicable disease can only be contracted by getting into the body the parasites that have come from the body of someone else. This principle, so simple that even a child can comprehend it, is yet the very foundation on which is based our measures for the control of the communicable or parasitic diseases. It is the primal instinct which even some animals seem to possess as evidenced by their efforts to cover up their excrement. Yet it required years of research and investigation by the greatest scientists before the simple truth was recognized which our instinct should naturally have dictated in the beginning. This simple instinctive truth is that what is discharged from the human body is dangerous.

In the organization of health work, the first points to be determined are the relative prevalence and importance of the parasitic diseases and the relative ability to prevent them.

In considering the prevention of these diseases, it is obvious that some may be prevented by enforcement of laws and that others can only be prevented by the actions or habits of the individual, which no low or health officer can control, being affected only by training and education. For example, the disposal of excrement can be controlled by law, but the sneezing and coughing of a person in the presence of others can only be controlled by the individual. It is clear then that the two weapons that must be used in the prevention of sickness are education and law. The greatest of these is education, both because of its direct results to enable individuals to look after their own health and also because proper laws will not be enacted without the education of at least a small number and the enforcement of the laws will not be accomplished without the education of a still larger proportion of the people.

As we all know, the parasitic diseases are dependent for their development upon two factors, the parasite and the bodily resistance. The bodily resistance is affected by everything connected with man's environment and manner of life, such as occupation, clothing, cost of living, social status, wage scale, housing, quality, variety and preparation of food and many other conditions which it is manifestly impossible for a health department or health officer to control except possibly through educational work. The principal field, then, for the health worker is to endeavor to prevent transmission of the parasites.

As already indicated, the human body is the breeding place and consequently the source of our disease producing parasites. We can then, from the standpoint of prevention, recognize several classes of preventable diseases based on the way in which the parasite leaves the body: as from the mouth and nose, from the bowels, from the genito-urinary passages, from the skin, and by suctorial insects.

The group carried by the secretions of the nose and mouth may be sub-divided into those in which the germ-laden secretion is forcibly thrown out by coughing and sneezing, to be borne by the air to other persons in addition to being conveyed from one to another on material objects, and those diseases which are not accompanied by coughing and sneezing.

Let us now consider the relative value of the two weapons—education and law—in the prevention of the diseases of the several classes above outlined.

Many diseases in which the germs are in the secretions of the mouth and nose which may be expelled by coughing and sneezing, as bad colds, grippe and tuberculosis, on account of their extensive prevalence are not generally quarantinable under the law. Even cases of measles and whooping cough in which the law requires quarantine cannot be prevented by this measure alone, as the most contagious stage is well advanced before the nature of the

disease is recognized. Furthermore, many cases of these diseases are not brought to the attention of the health officer or even a physician. If then these so-called air-borne diseases are to be prevented, the precautions to prevent the germs getting to others must be taken by the patient. This will only be done by educating individuals, and inculcating such simple habits as covering the nose and mouth or turning the face downward when coughing and sneezing. Education is our chief dependence in preventing the distribution of germs by coughing and sneezing.

In other diseases in which the germs are in the secretions of the mouth and nose and in which they are not expelled by coughing or sneezing but must be mechanically carried, the law can be of value in quarantining the known cases and in prohibiting the common drinking cup in public places. Diphtheria and scarlet fever, representative diseases of this class, can be prevented only to a very small extent by quarantining, as we have reason to believe that the recognized cases of these diseases, like the visible part of an iceberg, constitute only a small proportion of the volume of the unrecognized cases and carrier cases.

The germs in this class of diseases, not being forcibly expelled from the mouth and nose, are not found floating in the air and therefore are not taken in by breathing. In order for them to get into the mouth and nose, they must be conveyed there on something soiled with the nose or mouth secretions of others. The most important factor in preventing these diseases is to keep people from putting into their mouth anything unnecessary, and particularly those things that may be soiled by secretions of others. This cannot be done by law but by education, and especially by the training of children to right habits in their early years. In the consideration of the prevention of the diseases of the class spread by the discharges of nose or mouth, we reach the conclusion that education is a far more important factor than law.

The second class of diseases are those in which the parasites leave the body by the bowel discharges. These diseases can be absolutely prevented by prompt and safe disposal of human excreta. As a community improves its disposal of excreta there is a corresponding reduction of these excrement-borne diseases. In other cities, the sewerage is in the control of the officials and the householders are made to comply to the legal requirements. In rural communities, such matters are left with the householder and he disposes of the human excreta in accordance with his education, intelligence or previous training. There are usually no legal requirements for sewage disposal in rural sections and, even where there is a State law, it is too often not enforced. The natural law of self-preservation is more effective than the law of the land. We thus see that while law is a great factor in the control of excrement-borne diseases, education of the individual is of very great importance and is even essential.

In regard to those diseases due to suctorial insects, as the mosquito, the control is by war against the insect and by destroying the parasite in the carrier. By law, large breeding places as swamps and streams can be gotten rid of, and the small ones in a community, as rain barrels and gutters, can be ferreted out, but the task will be well nigh impossible without the intelligent coöperation of the individual citizens on whose premises the worst breeding places may be found. Furthermore, neither law nor the health officers will make the carrier take his quinine unless he appreciates the reason why he is taking the medicine so long after he is apparently well. Here again law can help, but education is of paramount importance.

Since the prevention of sickness, the aim of public health work, is to such a great extent dependent upon the education of the individual person, it does seem that our schools, public and private, should more fully realize their opportunity and responsibility and give at least the rising generation the knowledge that will protect them against so many of the troubles of life that would otherwise befall them. Our hope lies with the coming generation for the really complete development of public health work and the thorough use of our knowledge of the causes of disease for the people's benefit to the same extent that a surgeon uses the knowledge of causes of infection for the benefit of his patients.

We cannot expect all the older members of this generation to use fully the new knowledge. They are too well satisfied with the ways of their forefathers and the weeds of ignorance are too dense for the seed of truth to take root.

Our schools generally teach hygiene and sanitation, and the text books have been steadily improved, but it is doubtful if the schools sufficiently inculcate those very simple habits in regard to coughing, sneezing and putting things in the mouth, which too often determine the incidence of infection. Too often also our rural schools do not by example teach the necessity of sanitary disposal of excrement.

Happily, however, these conditions are rapidly improving and the schools are teaching more and more by precept and by example, giving instruction and inculcating right habits. When the schools fully do their part, it will not be necessary for the public health departments to engage so largely in educational work that has to be done at the present time for the benefit of those who have grown up since the new information has been discovered.

The time is approaching when the people will realize what great results can be accomplished by using the knowledge about prevention. The present methods are somewhat analogous to attempting to build the Panama Canal by pick and shovel work—it might have been done, but it would have taken a long while. So it will take a long time to eradicate even the most preventable diseases.

according to the present plans and methods, but none of us doubts that typhoid can be eradicated in a very few years by strict enforcement of law for safe disposal of human excrement and proper bedside directions. Any of us would gladly submit plans and specifications and undertake a contract for the eradication of typhoid in three to five years if given the necessary authority, and at a cost of less than ten per cent of what typhoid is now costing the people.

It is within the realm of possibility for a city or a State to eradicate diseases of certain kinds within its limits, but even if this should be done, new cases may be brought in from the outside. It is for this reason advisable that a campaign against any communicable disease should be conducted simultaneously with campaigns in adjoining States or communities. It is about time that we State officers should all be joining in a definite movement for the eradication of those diseases which we know can most easily be done. For instance, in our State the number of cases of typhoid fever in the last seven years has been reduced 59 per cent. This leads us to believe that, with a proper campaign, this disease can be eliminated. But, even though it should be eliminated once, there would be doubtless new cases from our neighbors unless it should also be eradicated from them. Why can we not all unite in drawing up and carrying out plans for a simultaneous campaign against typhoid all over the country and drive it out as we know can be done?

This should not be so great an undertaking when the value of the results is considered. By strict enforcement of the law requiring safe disposal of excrement and proper bedside precautions, the disease should promptly disappear.

With typhoid fever driven out, as should readily be done in a few years, the eradication of diphtheria could then be undertaken. It should not be a very difficult matter to eliminate it if the campaign is undertaken at the season of the year when diphtheria is at its minimum. By careful quarantine and search for carriers in the neighborhood, at that season, the foci from which the disease is spread would be gotten rid of.

According to the morbidity statistics in Virginia for the last seven years, the minimum number of cases of diphtheria occurs uniformly in June and the maximum in October. The disease apparently spreads from the foci which exist at the minimum season. The average number in June has been 1.5 per cent of the average total for the year and 8.2 per cent of the number of cases during the month of October. It would seem that a campaign to be most effective at the least cost should be pushed most actively and intensely in June.

It therefore, seems highly important that we health workers should endeavor to restrict or concentrate our resources and energies to those directions in which we believe we can accomplish great results and win great victories. With each victory, the people will have more confidence in public health work and will more readily give the support needed for winning victories over other diseases.

At the present time, the greatest public health agitation is against tuberculosis, not because more is known about the control of the disease, but because of its relatively great prevalence. Yet no one believes that the eradication of tuberculosis can be accomplished within less than one or two generations. As we believe that typhoid fever, intestinal parasites, as hookworm and roundworm, much of the summer diarrhœa, dysentery and diphtheria can be practically eradicated in a comparatively short time, would it not be wise for us to devote more attention to the elimination of these easily preventable diseases, and, when they are conquered, to concentrate our energies for the subjugation of those less easily overcome?

Now, in conclusion, the suggestions I have attempted to urge are:

1. The scope of health work should be more accurately defined and limited to the most practical lines.

2. Public health educational work should be very actively continued until it is taken up by the public and private schools in a manner commensurate with its importance and value to the individual.

3. Campaigns for the complete eradication of the more easily preventable diseases, like typhoid and diphtheria, should be conducted simultaneously in adjoining communities, adjoining states, or throughout the nation, according to well defined plans and specifications.

REPORT OF THE SECRETARY-TREASURER

DR. W. S. RANKIN

Mr. President and Members of the Conference: The work of the Secretary during the past year has consisted of publishing the transactions of the conference for the year 1915, and of distributing the transactions, as heretofore, five to each State Board of Health, and five each to the Medical Department of the United States Army, the Medical Department of the United States Navy, and the United States Public Health Service. Five copies of the transactions have been sent also to the National Association for the Study and Prevention of Tuberculosis and to the American Public Health Association. Extra copies have been distributed on request to officers of a number of other organizations and to individuals interested in the work of the Conference. The Secretary wishes to make official acknowledgement of the valuable help of Miss Mary Robinson, who has taken off his shoulders practically the entire burden of editing and having published the transactions.

The program of the meeting for this year was made out by the President, Dr. Williams, and the Secretary, and was based largely upon replies to a general letter written to the members of the Conference asking for suggestions as to the more important subjects which should be considered at this meeting.

As Treasurer, I wish to report as follows:

ASSETS.

Balance on hand May 14, 1915	$ 239.37	
Assessments collected since May 14, 1915	450.00	
Total assets		$ 689.37

DISBURSEMENTS.

1915			
May 27	To Miss Mary Robinson, railroad and hotel expenses and reporting	$ 52.63	
Aug. 18	To Miss Mary Robinson, work on transactions	48.55	
Nov. 27	To E. M. Uzzell & Co., balance on printing	57.02	
Oct. 30	To E. M. Uzzell & Co., part payment on printing	150.00	
Dec. 8	To Warren H. Booker, Notary Public, fees	1.75	
Dec. 24	To Bart M. Gatling, Postmaster, stamps	4.00	
1916			
Feb. 16	To E. M. Uzzell & Co., printing letter heads	2.00	
May 13	To W. S. Rankin, items paid from personal account	18.98	
Total disbursements			334.93
Balance on hand			$ 354.44

The following Provinces and States are in arrears for their 1915 dues: Manitoba, New Brunswick, Arkansas, Canal Zone, Iowa, Kentucky, Missouri, New Mexico, Ohio, Oregon, Philippine Islands, Porto Rico, Texas and Wisconsin.

Respectfully submitted,

W. S. Rankin,
Secretary and Treasurer.

Dr. G. T. Swarts, of Rhode Island, moved that the report of the Secretary-Treasurer be received and placed on file, and the books of the Treasurer properly audited. This motion was carried.

Dr. H. M. Bracken, Minnesota: My feeling is that at these conferences we should present a subject in as few words as possible, and in general terms, and that those who take part in the discussion should do the same thing. I think it is good form to bring in a little example of one's own work sometimes to illustrate a point. We who have been in many conferences

know that. There is one thing that I want to call attention to, viz., papers presented at this conference are limited to twenty minutes, and discussions to five minutes.

The following committees were appointed by the President:

Auditing Committee.—Dr. Gordon Bell, Dr. H. M. Bracken, Dr. Chas. F. Dalton.

Committee on Nominations.—Dr. J. N. Hurty, Dr. W. C. Woodward, Dr. G. T. Swarts.

Committee on Resolutions.—Dr. John S. Fulton, Dr. A. J. Chesley, Dr. S. L. Jepson.

Publicity Committee.—Dr. E. R. Kelley, Dr. T. D. Tuttle, Dr. W. S. Rankin.

REPORT OF THE COMMITTEE ON CONSERVATION OF VISION

This report was presented by Dr. G. T. Swarts, Chairman:

Your committee at previous meetings has presented a consideration of the subjects of ophthalmia neonatorum and of trachoma, with practical suggestions for their control by state boards of health.

The next most interesting subject in the line of conservation of vision appears to be the consideration of what can be done to minimize the depreciation and loss of vision among the industrial workers or trades.

As a well established standard in safety first we have for many years laid particular stress upon the dangers attendant upon the manipulation of metals from the soft molten state to that of the hardest steel. The sparkings or spatterings in pouring molten metal from furnaces to flasks, to ladles and to molds, are numerous at each pouring, and burns of the cornea result. The chipping of metal causes particles to penetrate the interior of the eye often to its complete destruction, and small particles of steel, or dust from emery wheels thrown into the air with force, while grinding, produces at times a chronic conjunctivitis with granular lids.

When fine grains of dust or cinders become lodged on the conjunctiva, it is a common practice among workmen to seek the assistance of one of their fellows to remove the offending particle. Some of these men acquire considerable dexterity in manipulating the lids of the eye, but too frequently they attempt to dislodge a speck which is firmly imbedded, or even a piece of steel which has penetrated the cornea but is visible to the operator, thus causing considerable traumatism with the consequent inflammation. In these operations, unfortunately, not much attention is given to asepsis of the fingers or instruments, and a slight wound is often infected, to the ultimate loss of the eye.

These small particles are termed by the workmen "motes." Several of these may be projected into the eye in the course of a working day; they may become fixed there, and with an accumulation of scars produced by healing of small wounds in the cornea there may be produced many nebulæ which will impair the field of vision. Small chips of wood may be projected with violence in operating a circular saw. In the process of chipping, or dressing rough portions from iron and steel castings, the chips may strike against some nearby surface and rebound into the face and eyes of the workmen.

Effort is made to protect the eyes by means of exhaust fans which draw the air from the room and with it the small particles thrown off from the wheels. While the workmen are cautioned, and in certain shops obliged, to wear protective goggles, yet owing to the discomfort in wearing them, caused by their weight and the accumulation of perspiration, most workmen are willing to run the chances with consequent loss of sight. Objection is also raised to the liability of the glass of the goggles cutting the eye when broken, but of 2,000 cases of eye injury, which were analyzed, only three cases were known to have been caused by broken spectacles. At times rock crystal is used for the glasses, and it has been suggested that a reinforcement of strong gauze or wire, of sufficiently fine mesh, could be placed over the goggles or used in place of the transparent medium. Rock breakers and stone masons are operatives who are liable to be injured by flying particles.

In the use of methyl or wood alcohol, sometimes called wood spirit or methylated spirit, there exists a danger to eyesight as well as to the health and life of man. The fluid, which is a product of distillation of vegetable fibre, has an extremely disagreeable odor and taste. In 1890 a process was introduced whereby this odor was removed and the fluid was sold under various names of "Columbian Spirits," "Standard Wood Spirits," "Cologne Spirits," "Green Wood Spirits." When ingested, this fluid acts as a violent poison, producing iritation of the intestinal tract and of the nervous system, accompanied with blindness and frequently death. This deodorized product looks and smells so much like grain alcohol that it is a serious menace to life and eyesight.

Owing to the high internal revenue placed upon ethyl or grain alcohol, and the comparative cheapness of the wood alcohol, even when deodorized, it has been freely used in the arts in making varnishes and shellacs, liniments, tinctures, hair dyes, and as a fuel for lamps and stoves. It has also been used in making Jamaica ginger, essence of lemon, proprietary remedies and whiskey. By flavoring the deodorized wood alcohol with aromatics and a little prune juice, a cheap intoxicating drink or beverage is produced and is sold and drunk as whiskey. Numerous deaths have been recorded following the ingestion of this fake whiskey; usually

several persons are affected at the same time. Arrests and sentences for criminal action in selling this mixture have followed, yet every little while new cases of poison are recorded.

Partly as the result of action taken by the American Medical Association and by a committee of manufacturers, an act was passed by Congress for the purpose of securing cheaper alcohol for industrial purposes and to drive out of the market the poisonous deodorized wood spirit. The result was the introduction of denatured alcohol, which is a harmless grain or ethyl alcohol, rendered unfit for drinking purposes by the admixture of various ingredients the odor of which is disagreeable. As there is no tax upon this product, it can be sold as cheaply as the poisonous alcohol, and there can be no excuse for the existence of the latter except for the profit of those who have heretofore manufactured it.

Laws have been passed in several states requiring that all the containers holding wood alcohol shall bear a "poison" label with the words "poison" and "not to be taken internally" appearing in large type. The sale of this form of alcohol should be prohibited entirely.

Interest in this product, to your committee, is not only because it produces blindness after ingestion of the poison, but from the dangers arising in the process of applying schellac which has been "cut" or dissolved in wood alcohol when used in close or confined spaces, such as beer vats. The fumes of this alcohol are at times sufficient to produce blindness from rebreathing the methylated atmosphere. The death of an infant was recently recorded as the result of inhaling the fumes following the use of schellac in painting the kitchen floor, the windows having been tightly closed.

In burning this liquid the vapor of formaldehyde is evolved, which will produce injury to the sight.

With the earnestness for preparedness, and the fever to get rich quick by supplying ammunition to belligerent nations, carelessness is liable to creep into the use of nitro benzol, or dinitrobenzol, utilized in the composition of explosives. This product is also used in the production of analine dyes and as a scent. Its inhalation produces symptoms of headache, weakness, blueness of the face and impaired vision. In the grinding of the dinitrobenzol a dust is given off. Vision diminishes gradually with contraction of the field of vision and failure of color perception.

With the increasing demand for rubber in the automobile industry there is an unnecessary number of cases of poisoning developed in the use of carbon bisulphide, which is used in vulcanizing the rubber. Its inhalation produces symptoms of dizziness, irritability, excitement, muscular weakness, mental disturbances, and impairment of vision, which is not always complete.

Aniline may be absorbed by those working in it or by users of cosmetics or hair dyes, and produce disturbances of vision.

In blasting with dynamite carbon monoxide is evolved. This at times causes impairment of vision.

In occupations requiring concentration or continuous application of the eye, the question of illumination is an important factor. Work requiring these conditions may be noted in the occupation of the student, engravers, bookkeepers, and trades calling for close and continuous concentration of vision.

It has been shown that an excess of volume or intensity of light gives no greater working value than a lesser quantity, while at the same time the excess of rays fatigue the eye.

Much attention is given to the source of daylight and the position or direction from which it is secured. Light emanating from the north has an enormous volume, but not a very high intensity. It is easily diffused and steady. Light coming from the direct rays of the sun, as from the east or west, is not only more intense, but is varied. The photographer, the artist, and the user of the microscope selects the northern exposure for the best work.

An illumination of two or three foot candles is claimed to be sufficient for ordinary school or office work, depending upon the general lightness of the room, as influenced by the color of the walls and the room furnishings.

While the eye can adapt itself to a bright or dazzling light, yet the effort for extreme accommodation exhausts the retina and produces pupillary spasm and fatigue. It is possible to discern objects in comparatively dark spaces when the eye has found its point of accommodation, but an extreme light, suddenly removed, leaves the person temporarily blind. This is noticed in watching an eclipse, going from a brightly lighted room into a dark closet, or in quickly passing the dazzling headlight of an auto on a dark road.

Too intense a light causes anesthesia of the retina, and too much light or insufficient light produces mental exhaustion, as does a flickering light noted by some persons in gazing at a moving picture presentation.

With the use of artificial light, and especially with the introduction of electric illumination, we are influenced in many ways, for better or for worse. From the old fashioned oil lamp which served satisfactorily for close work and is even now preferred by many students and sewers, we have progressed to gas, electric bulbs with carbon filaments, to the brilliant, white light of the Tungsten lamp. Our vision is also influenced by the use of the arc lamp, giving a concentration of light with limited diffusion and intensity of shadow, and the mercury lamp, which, while giving a softer light, is said to produce a psychological influence, it being claimed by those using it that the greenish character of the light produces a depressing effect.

Sufficient light of the day is to be preferred, but with the demand for increased labor in many industries carrying the work not only

beyond sundown but through the entire night, we have an additional tension in the use of artificial light, but by which, when properly generated, delivered and distributed, we secure an even intensity and less variable light than daylight, which is influenced by clouds.

Artificial light may be delivered direct, indirect and semi-indirect. To determine the value of each we must observe the effect on the acuteness of vision and the effect upon endurance. Experts have shown that there is greater acuteness of vision in daylight of the same candle power. Next in value is the indirect, and there is least acuteness of vision in the semi-indirect. Endurance depends upon diffusion. Daylight and the indirect system give the best diffusion and maintain efficiency through a wide range of intensities.

These conditions are readily observed in the illumination of an auditorium. With an unfrosted, incandescent electric globe, placed between the person and the stage, or with the light suspended directly over the observer, there occurs an exhaustion of vision and of brain, while with indirect lighting, where the rays are reflected from the ceiling or walls, we have an even diffusion of light and the audience sits in comfort.

In the construction of one-storied buildings for manufacturing purposes, it has been found advantageous to illuminate the work rooms from skylights placed in rows with a slant toward the north. This gives a white and well diffused light directly upon the work. In many-storied buildings in narrow streets advantage is taken of the refraction from ribbed glass, the ribs arranged at a suitable angle to receive light coming from above and directing the rays across the room or shop. This not only gives a strong light in the center and rear of the shop, but also provides a diffused form of light which is restful.

Artificial lights contain a much larger percentage of the short violet rays, which cause irritation of some eyes, and ocular fatigue comes on more quickly than with the use of daylight. The different character of the rays coming from electric illumination has been credited with pathological changes in the skin, the hair and the eyes. It is claimed for the mercury lamp that the rays therefrom are less injurious than any other form of electric illumination, but the subject has not been sufficiently studied as yet to secure exact determination.

In the occupation of glass-blowing intensity of light and heat are two factors which influence the conservation of vision. A German oculist has found that 12 per cent of the glass workers observed by him, who are upwards of forty years of age, presented a crystallization of the lens of the eye which later became opaque. It is considered that the continual exposure to the extreme heat, in removing the dazzling molten material from the glowing furnaces, causes the left eye to be affected with a cataract. It is

assumed that this occurred because the workman usually stands at the left side of the furnace. Another observer considered that excessive perspiration associated with the work plays an important part in producing the pathological change. Also, the brilliant, white dazzling light fatigues the retina and reflexly influences the lens.

Referring once more to ophthalmia neonatorum, it has been noted that opposition frequently develops to the compulsory recognition, the report and treatment of this disease. As a result of the active campaign established against this condition, the laity are becoming informed that ophthalmia neonatorum is considered by the medical profession as being a specific disease due to the presence of the gonococcus, and in spite of prudish opposition against receiving specific knowledge they are also gradually awakening to the fact that gonorrhea is a communicable disease and that it is frequently of venereal origin. Therefore, issue is taken that, as it is associated with illicit or immoral relations, to require the report of the presence of the disease in any family is to brand the parents with infamy, and to place prophylactic drops in the eye of a new born baby is to assume that the parents or the attendants might be in a condition to transmit gonorrhea to each other or to the infant.

It has been suggested by oculists and obstetricians that ophthalmia in the new born occurs very frequently without the presence of the gonococcus and may not be diagnosed upon simple clinical examination. It has therefore been suggested that the term "sore eyes in the new born" be used in speaking of or reporting ophthalmia neonatorum, and that in educating the public, by lectures or by literature, reference be made to the fact that all sore eyes are not incriminating, but nevertheless require immediate treatment. In seeking legislation it is desirable that all "sore eyes" should receive compulsory control lest a gonococcus infection may be neglected in the assumption, or with the excuse, that the case was one of ordinary staphylococcus infection.

The application of preventive drops would not be objected to as a routine practice, by the laity, if it were shown that "sore eyes" of a non-specific character might occur.

Another obstacle in the success of the compliance with a law requiring prophylactic treatment in all cases of new born infants is that the 1% nitrate of silver solution sometimes produces a mild conjunctivitis when the eyes are perfectly clear or free from any infection. The physician hesitates to "start something," lest he be blamed. On the other hand, it may be that he has his suspicions from the environment, be the social standing of the patient good or bad, that the chance may exist of a specific infection being present, in which case he could excuse his treatment to the parents on the grounds that the law required it of him, relieving him of possible accusation that he has suspicions.

If the Committee on Conservation of Vision of the American Medical Association could see its way clear to approve some substitute prophylactic, less irritating than nitrate of silver, it would produce less hesitancy upon the part of the physician to abide by the compulsory treatment. Sophol, an albuminate of silver, referred to in a previous report of your committee, has for many years been in use in the hospitals in Washington, D. C., and by the obstetricians and gynecologists in that vicinity, and is the official medicament supplied free by the Department of Health of the District. The advantages claimed for it are that it is non-irritating, does not deteriorate rapidly upon exposure to light as does nitrate of silver, and does not, like argyrol and protargol, stain the skin of the child, while it is effectual as a gonococcicide.

It is interesting to note the increased interest in the line of conservation shown by voluntary committees, the United States Public Health Service, State boards, and many corporations, which, while looking for the betterment of their operatives are at the same time securing an economic gain in operation of their plants.

Several monographs have been issued by the National Committee for the Prevention of Blindness. The American Medical Association is continuing its series of publications on conservation of vision. The United States Public Health Service has issued new literature on the subject of trachoma and other eye affections. The New York City Board of Health has issued a circular on the prevention of ophthalmia neonatorum.

Ophthalmia neonatorum has received attention in Kentucky in the issuance of nitrate of silver outfits by the State Board of Health. There is increased activity and attention given to the reporting of this disease in Louisville, Ky. A fund has been established for the employment of a nurse to visit cases of ophthalmia neonatorum in mountain districts. In Alabama new legislation calls for the reporting of cases of the disease.

A circular on trachoma has been issued and is sold by the National Society. There is also provided the outline of a lecture on babies' sore eyes. Lantern slides and exhibits are available for the use of lecturers in any part of the country. An effort is being made to provide for the eyes in penal institutions and to supply treatment and glasses. Alabama now requires the report of trachoma. In Argentina, the South American Republic, with every civil marriage a certificate of freedom from the disease is required, and printed advice is placed thereon stating that one-third of the blind have become so from babies' sore eyes and that the parents should take great pains to see that the eyes of the new born receive proper care. The same advice is placed upon the birth certificate. Vaccination now prevents the loss of sight in Argentina, where 6,856 persons have been made blind by smallpox.

The education of midwives is receiving attention in Kentucky through the courts, where a number of them have been heavily fined. The New York State Department of Health issues special rules for the practice of midwifery.

The influence of the occupation of the student and school child upon the eyes is an extremely important one and is receiving increased attention through school inspection. The subject is of such a broad scope that it would call for "another story" and would prolong unnecessarily the length of this report.

Suggestions.

It is the intent of this Conference to deal with matters which may be made practical and applicable by state health departments, and the following suggestions are presented:

1. To acquaint by means of illustrated lectures, literature and exhibits, county or district health officers, legislators, and the laity with the communicability and dangers associated with the presence of ophthalmia neonatorum, trachoma, the effects of improper illumination in schools, workshops, factories and offices, and in the homes.

2. Education to be useful must be presented in a simple manner in pamphlets which are not too extended, emphasized by illustrations.

3. Use the term "babies' sore eyes" when referring to ophthalmia neonatorum, and for the control, and avoidance of evasion, of doctor and midwife.

4. Disparage prolonged or violent attempts to remove foreign bodies from the eye by unskilled workmen with dirty fingers and dirty utensils. Distribute literature and post warnings in conspicuous places in the shops.

5. Advocate the utilization of protective goggles in industries where dangerous particles are flung off from the work and may penetrate the eyes.

6. Give attention to the study and character of artificial light and the proper manner of its use in order to be prepared to give advice in the construction or arrangement of school rooms and workshops.

7. Secure legislation for the control or discontinuance of the sale and use of wood alcohol.

The following article by Dr. Seymour is presented as a part of the report of this committee:

OCULAR MEDICAL INSPECTION OF SCHOOL CHILDREN

DR. M. M. SEYMOUR, Saskatchewan

In the Province of Saskatchewan, Canada, a system of ocular medical inspection of school children is in operation under the direction of the Commissioner of the Provincial Bureau of Public Health, at Regina.

The Province is divided into health districts. The area comprised within the limits of every city, incorporated village, rural municipality, or local improvement district, constitutes a separate health district. Each district has its council, the members of which also form the board of health. This body appoints a qualified physician as Medical Health Officer, and fixes the amount of remuneration for his services. It may also employ the services of one or more sanitary inspectors.

The Bureau of Public Health employs a number of specially trained medical health officers and trained nurses. When the Commissioner receives a report from a district of a serious outbreak of an infectious or contagious disease, he may send out one or more of these officials to assist the local authorities in its control. A medical examiner is also employed, who inspects the eyes of school children in foreign settlements, and gives special attention to the disease of trachoma.

The primary object of the introduction of ocular medical inspection in rural schools was the eradication of trachoma from both the schools and the homes in the districts of the foreign-speaking people. This work is being extended until now examination may be made for physical defects, parasitic and contagious diseases, etc. Defective children are referred to their parents for treatment by the family physician. In cases of extreme poverty, the municipality provides the necessary relief; and occasionally the care of special cases is undertaken by the Bureau.

In the examination of children's eyes, the personality and skill of the examiner have much to do with the success of his undertaking. Children are frequently nervous—some of them in actual terror—over having a stranger examine their eyes. Therefore, gentleness is an essential; otherwise, he may have to examine mucous membranes that are congested by much weeping, and thus accomplish nothing by way of diagnosis. Children in schools under discipline are often much easier to examine than the same children in their own homes, where they may take refuge under parental protection and sympathy.

In a rural school the method of procedure for ocular inspection is as follows: The teacher is instructed to send three or four children together to the examining room; and as each is examined and

returns, to have another take his place. By this arrangement, the examiner is not kept waiting, and the small number prevents confusion. Those waiting for examination, in observing the nature of the work, generally lose every trace of fear. The child to be examined is placed 20 feet from a Snellen's vision chart for schools, and asked to read the letters. Each eye is tested by itself, the other being covered. The child's attention is then directed to astigmatic chart, and asked if any lines in the dial appear darker or lighter. Following this, a near-test card is placed in his hand, the position where he holds it often imparting useful information. If a defect is found in his vision, he is advised to tell his parents that he needs glasses, the teacher also being informed of his condition. Next the eyelids are everted and examined, having trachoma particularly in mind. If there is any suspicion of congestion or discharge, he is questioned, to ascertain, if possible, whether any of the members of his family have sore eyes.

Thorough disinfection of the examiner's hands and instruments is carefully attended to, after each examination involving the handling of the child's eyelids.

Where trachoma cases are found, the other members of the families are examined in the homes, and it is usual to find one or both of the parents suffering from the disease. Free treatment is provided, and instructions given relative to frequent and thorough cleansing, the use of individual towels, etc. These cases are either left in the hands of the local medical health officer, or undertaken by the Department.

The highest efficiency is obtained in this work, through securing the coöperation of the teacher and parents, as well as that of the medical health officer of the district. Any general medical inspection in the schools is carried on only after the local medical health officer has been invited to assist. Harmonious reations are indispensable, and result in almost immediate, perceptible benefit to the school, as the medical health officer sees that the cases receive treatment. The board of health and the school trustees are two other strong factors in looking toward the success of the work, as their influence in the community is of undoubted value.

Dr. H. M. Bracken, Minnesota: Dr. Swarts, in his very excellent report, referred to north light as the best. North light alone should never be depended upon in the schoolroom or in any workroom, for we should not keep people in any room which never receives any sunlight. The tendency now is to have the schoolroom lighted from one side only. East light is the best for a room lighted from only one side, because the sun gets off that room early in the school day. West light is next best. South light should not be used, because it is too bright.

DR. J. N. HURTY, Indiana: I want to ask Dr. Swarts if it has been proven that carbon monoxide has any ill effect upon the eye; also whether or not, in his very extensive reading—and he has evidently studied this subject most profoundly—he has learned of any injuries to the eye in automobile factories, and, if so, whether they are due to the gasoline or to the products of the burning of gasoline. I wonder very much if he has an answer to these questions.

DR. E. R. KELLEY, Massachusetts: Dr. Swarts implied that the serious cases of ophthalmia would be specific, *i. e.*, of gonococcus infection. I remember very distinctly that Dr. Lewis, of Buffalo, in 1909, said before this Conference that a large proportion of ophthalmia neonatorum cases were not due to gonococcus infection. Dr. Geo. Derby, of Boston, at a conference held recently, said that he is not of the opinion that over thirty per cent of the serious cases that reach the institution with which he is connected can be attributed to gonorrhea. I think we shall need to emphasize that point to the medical profession.

In reference to the use of prophylactic: We had a little experience which has rather made me incline to believe that when we get these large numbers of cases of inflammation of the eyes of the new-born, it is due to decomposition products, rather than to any quality in the product itself. For instance, we used to use a rubber dropper. We found that the silver nitrate acted on this rubber. In many of the cases where the infection came on rapidly we found the percentage of silver nitrate to be the same as usual, or much below 1%, but small particles of the rubber had become decomposed. Since we have been using the wax ampule the number of complaints has decreased greatly.

I should like very much to have Dr. Woodward give us some estimates as to the cost of supplying the prophylactic. The cost, of course, is a definite factor in distributing it for general use.

DR. W. C. WOODWARD, District of Columbia: So far I have had no data as to the cost. The best information I could get, based on the experience of one of our lying-in hospitals, was to the effect that a one-per-cent solution of silver nitrate was not

effective. There seemed to be no question of that, and in this hospital the silver nitrate solution was used by physicians only. The use of a 2% solution was condemned where it has to be used by midwives. It seemed that sophol was the best substitute, as it does not stain the face and the clothing.

Our method of using the prophylactic solution is different from the method used by others, inasmuch as we do not confine its use to so many drops. We give two vials in each package, each vial containing a liberal amount. In each package is inclosed a piece of sterile gauze for each eye, and the midwife is instructed to wipe the eyes with this gauze before irrigating. She is told to empty then the contents of one vial into one eye and then empty the second vial into the other eye. This lessens the danger of infection, and also avoids missing the eye. If you use half a drachm to a drachm of the solution, you are likely to get some of it in.

Sophol is a silver preparation, a German synthetic preparation. We have had no trouble in procuring it. We buy it from some of the standard drug vendors and put it up in our own containers.

The cost is 4.8 cents, exclusive of labor. This covers the cost of the container, printed matter, gauze, and sophol. I have just telephoned two druggists, one of whom says that the present quotation on sophol is $1.55 per ounce, and that he has not any; the other says it is $1.50 per ounce and he has it in stock ready for delivery at that price.

Dr. Kelley: The statement that is made again and again, that one-per-cent silver nitrate is not effective, is usually based on institution experiences. I think we should give some weight to large wholesale clinical experience. The first year silver nitrate began to be used there were twenty-two cases of blindness or partial blindness (by this I mean that both eyes were so badly affected that they can never be used in earning a living). This last year there were only two, and it is almost impossible to consider that there has not been some cause-and-effect connection between the use of silver nitrate and the reduction of the number of cases of blindness.

Dr. Woodward: I did not mean that a one-per-cent solution of silver nitrate is of no value, but that it would rank below sophol, below protargol, etc.

DR. C. A. HARPER, Wisconsin: I desire to add a word in behalf of silver nitrate from the practical side of its use in the State of Wisconsin. By legislative enactment it is compulsory to use some solution in the eyes of all new-born babes. Over a period of twenty months, the time in which the law has been in effect, nearly one hundred thousand babes were born in this State.

DR. KELLEY: What is the type of your container, and have you made any chemical analyses to learn if it is standing up?

DR. HARPER: We use wax ampules of 1% solution. We have not made any chemical analyses lately. It is apparently holding up all right. We have them shipped in quantities from twenty to thirty thousand ampules at a time. They are enclosed in neat wooden boxes, each containing twelve ampules, properly labeled. General satisfaction is manifested on the part of the users. There is no danger of mechanical injuries to the eye from the use of the wax ampule. Since its use we have had but one case of ophthalmia neonatorum reported to us. This case occurred in the city of Milwaukee. The physician in attendance stated that he had used the ampule. There was apparently a difference of opinion on the part of the parents of the child. This case was reported to the health department of the city of Milwaukee and the physician was arrested and prosecuted. Owing to a conflict in the testimony, however, he was acquitted. He did not report the case, as I understand it, according to the time limit of the law, and it is possible that he will be tried again for failure to report the case.

I am a firm believer in this form of nitrate of silver and its compulsory use on all new-born babes.

DR. JOHN S. FULTON, Maryland: I think it is the general feeling of the people in Maryland that no such law should be on the statute books anywhere, *i. e.*, a law providing for compulsory interference with babies' eyes. To interfere with babies' eyes for no reason at all is a very unwise thing to do, and must inevitably injure them. The assumption is that it is safe to put a little salt solution or nitrate of silver solution into the eyes when there is no definite reason. Whenever it is compulsory

to use something, it is inevitable that there will be some mistakes in the substance. Already we have heard of several injuries, some of them from the containers. To make it a blanket thing, and always do it, and to put it up to every kind of physician and to midwives to flush the eyes of babies, seems to me, on the whole, to be just as likely to do harm as good. That is my opinion, and each year it seems to me to be strengthening.

I doubt if there are ten persons in this room who could properly flush a baby's eyes.

Dr. Kelley: I just want to say that that is the most dangerous doctrine I have heard in a long time. How do you account for so many blind babies? I don't see how anybody can tell, how any physician can tell, whether a new-born child's eyes are infected with gonorrhea.

Dr. W. W. Golden, West Virginia: Dr. Fulton's statement can only be sustained on the assumption that he has reasonable proof that the procedure is not always useful. If not, he should extend the same argument against smallpox.

Dr. T. D. Tuttle, Washington: If we carry out that principle, unless we know that a man is a typhoid carrier, we have no right to take care of his excreta.

Dr. Fulton: I do not understand Dr. Golden's analogy. But my answer to Dr. Tuttle would be perfectly simple. My doctrine might not be good and might not be of universal application. His practice might be good. It is certainly up to us to define the application to the area where the application to the eyes of new-born babies might do more good than harm. I think it is quite likely that a good many physicians evade a law of that sort. Certainly, if I were one, I might evade it in some cases. Many physicians have said they were afraid to make an inquiry. I dislike to do anything that is unnecessary, because whatever is unnecessary adds inevitably some danger. The difficulty might be avoided by the physician's asking the parents if they wanted the baby's eyes flushed out.

DR. SWARTS, closing discussion: I am glad that Dr. Bracken brought out the question of east light, sunlight, etc. My data on this question was taken from others who know more than I about it.

In regard to the carbon monoxide and gasoline, I am not in position to answer that question. I do not believe that it has been investigated sufficiently to determine; but there is more or less ophthalmia produced by these irritating gases. It demands greater interest now because of the universal and increased use of these substances.

In regard to the abandoned outfit used in Massachusetts, I condemned it last year because the rubber cap would crumble away and the silver nitrate would deteriorate. The wax ampules previously made melted in warm weather and were brittle in cold weather, but I understand they are now made so as to stand all changes of temperature.

I am told that the outfits of sophol, including the drug itself, the two containers, gauze, directions, box, etc., cost about five cents. That is what I pay for a dropper and one c.c. of nitrate of silver.

In Dr. Kelley's case, it is doubtful whether the nitrate of silver acted on the rubber, forming an irritating chemical substance. I would be inclined to believe that the irritation was mechanical from the action of the small particles of rubber.

I think the question of vaccination is quite apt. Whether to put drops in the baby's eyes or not, in a respectable family, should be left to the physician. If the law requires it, some form of prophylactic solution may be used. You can use boric acid solution, if you suspect nothing, or you can use nitrate of silver if you think it necessary.

Now, in regard to the likelihood of danger, it comes to the question of where venereal disease may exist. Is it less prevalent in some localities than others? I would like to ask the gentleman from Baltimore whether the survey of Baltimore indicated that there was a smaller percentage of venereal disease there than in some other places?

On motion of Dr. Bracken, the report of this committee was accepted. The committee was continued.

REPORT OF THE COMMITTEE ON PELLAGRA

The report was presented by Dr. James A. Hayne, South Carolina, chairman.

I feel that perhaps pellagra is a subject that has been discussed ad nauseum in the Southern States, and perhaps not sufficiently discussed in the Northern States. I do not know whether the Northern States feel the same interest in this subject that we of the South perhaps feel. I could understand that lack of interest when this disease was supposed to be an endemic disease due to certain factors prevailing in the state, *i. e.*, a disease that could not be contracted at the North because in the North there were certain climatic or other conditions that would prevent it from spreading. But considering the most recent work that has been done along this line, if this disease is due to economic conditions prevailing in the South, I would ask you gentlemen of the North to consider this subject, because these same economic conditions may at some time or other prevail in the North. If it is a disease due to poverty, due to the high price of beef, to the high price of eggs, it is within the bounds of possibility that even the North may at some time feel the pinch of poverty. Therefore, I take the liberty of explaining my remarks on pellagra to this Conference, which is composed of members from both North and South.

The work which has been done in the past year has been epoch-making for pellagra. The conclusions the United States Public Health Service have drawn from their extensive and intensive work have narrowed down the subject of pellagra to its cause. Their work has proved very conclusively that if a community is economically fit, it will not have pellagra; that if a person has pellagra and can get hold of the proper kind of diet, he will get well. That diet is the cause of pellagra I am yet unwilling to accept. I cannot conceive that such economic conditions can exist in my State as to make pellagra second in death rate only to tuberculosis. Knowing the economic conditions there, I cannot believe that 1,900 people died because they could not get the proper kind of food, or, if they did get the proper kind of food, because they would not eat it. South Carolina has only ¼ of 1% foreign-born population. Why, if the people could get the same kind of food they got twenty-five years ago, have they suddenly determined to kill themselves by not eating it?

These, to me, are very convincing arguments. They are not convincing to those who believe that diet is the cause of this disease. I have taken case after case and have gone over them carefully, and I can show a case of pellagra in a person living on such diet as eggs, with ham and bread for breakfast, fresh meat for dinner, and fresh milk all the time. When I say that a case like this was

found by the investigating committee of Vanderbilt University, under the auspices of that University, they say that this child might not have gotten that kind of food. I cannot answer such an argument. It is true that in the control of the orphanages the children have improved and have not shown evidences of pellagra since the diet was changed. But, if that same study had been made on some other disease like tuberculosis, I have no doubt but that the other disease would have disappeared. I do not know. All I can ask is a continuance of this committee, so far as I am concerned, and that we be allowed to make a report.

I have had my say, and I think it is only right to the other members of the committee to ask that they be allowed to express their opinions. Dr. Harris is as absolutely confident that corn and corn products cause pellagra as I am certain they do not, and Dr. Goldberger is just as sure that pellagra is due to some deficiency of diet not yet defined. I think it would be well for this Conference to have some statement as to what constitutes a balanced or unbalanced ration. I think, if we are going to prevent pellagra by feeding, we must have some kind of basis upon which to proceed. Suppose that we tell the people to eat meat, eggs, beans, peas, milk, etc., and they will not have pellagra, and they point out to us someone who eats these things and who has pellagra? Let someone point out the lacking ingredient. If they do not know they should be candid enough to say so. What is the lacking ingredient that causes pellagra?

DR. JOSEPH GOLDBERGER, U. S. P. H. S.: I believe this is the second annual report of the Committee on Pellagra of this Conference. I should say, perhaps more accurately, the second annual confession of faith on the part of Dr. Hayne. Dr. Hayne is not really so far away from the point of view presented by the Health Service as those of you who heard him this morning might suppose. I think he said to me some time ago that he believed it had been proven as well as anything could possibly be proven that pellagra could be prevented by diet. Now, we thoroughly agree in that statement. That is the one fundamental thing the Public Health Service has attempted to determine by its researches and to give to sanitary officers and others interested. It seems to me, at least, to be a perfectly simple sanitary proposition to go out in the highways and byways to preach to your people who are suffering that they should get a proper diet. Now, Dr. Hayne wants to know exactly what that is and wants us to define exactly what we mean. Nothing would please us more than to be able to do exactly that

thing. I would like to point out that we have taken considerable pains to state that we do not know exactly what a balanced diet is. Nobody knows, for our notions are entirely in chaos, as the result of modern investigations in nutrition and as to the role of specific foodstuffs in nutrition. We did not know a few years ago that a certain kind of amine acid was specific in its effects on controlling growth and that another acid controlled maintenance. We do know that now, but we are only beginning our knowledge of this very important and intricate subject. It is obvious, therefore, why we cannot give Dr. Hayne the information he desires and that we all desire. It may be many years before we can give it to him. However, that ought not to make it difficult or impossible to go out and preach the doctrine of a "balanced" and varied diet.

For practical purposes, all we can say is that people who eat an abundance of certain fresh animal foods and legumes, plenty of them (we cannot always tell when the individual has had enough, the only way we can tell is by the physiological effects), so long as they maintain good health and do not develop scurvy, say, or beriberi, or pellagra, and without having any other nutritional disturbances, we can say that the diet is properly balanced. That is the best we can do, and little as it may appear to be, we believe it is enough to put us in position to control the incidence of the disease and its effects on a large part of our country.

Dr. Hayne said that we might tell the people to eat plenty of beans and peas and that they would not have pellagra, but that someone might arise who could point to a person doing this and who still had pellagra. How does that occur? Perhaps in this way: that in the preparation of the beans and peas which that individual has been in the habit of consuming some culinary error has crept in that makes it an unbalanced diet. The use of sodium bicarbonate at a high temperature has done harm in some instances. The use of sodium bicarbonate might destroy the very things for which we want beans and peas in the diet. The mere statement that a certain individual has beans and peas in abundance is not sufficient to controvert the possibility that the individual has perhaps an improper diet. We must be extremely cautious about the adequacy of a diet that somebody simply told us about. We are not in position to accept as ade-

quate evidence the statement as to the sufficiency of a diet when specialists in this field are not themselves able to tell us when a diet is adequate and when it is not adequate, on the simple statement of the case.

I mention this to point out that the mere statement on the part of an individual does not prove anything. Perhaps the individual might not report it accurately, not because he did not want to, but because of his misunderstanding of details.

The report that comes from Vanderbilt University is without real significance, as any one who will read it thoughtfully will, I am certain, find. It is largely a series of general statements not borne out by such figures as they themselves present.

Please recall the fact that children on fresh cow's milk are reported to have had scurvy, so that suggests that, ordinarily, while fresh cow's milk is known to be preventive of scurvy, yet under some conditions it may be a faulty diet. Sometimes children on mother's milk have beriberi, which shows that under some circumstances mother's milk may be faulty.

Safety lies in having a variety of food, so that we do not place too much dependence on any one article.

DR. A. J. MCLAUGHLIN, Massachusetts: I would like to say just one word. I am intensely interested in this subject because of my experience in the Philippines with beriberi. I want to say now that I have great admiration for the type of man represented here by Dr. Hayne. While he is credited to South Carolina, I feel he more properly belongs to Missouri. One of the most useful units in medical discussion is the man who has to be shown, and while I believe that Dr. Hayne will eventually concede that diet is the cause of pellagra, I respect him for holding out. The most important thing is that there is no difference in the opinion of Dr. Hayne, Dr. Harris, and Dr. Goldberger that proper diet will prevent pellagra and that proper diet will cure pellagra.

DR. A. E. FRANTZ, Delaware: What we want here is a report. We want these people to agree, not to come here and argue this and that and the other; we want them to come here and tell us what to do with pellagra. We are very much interested in the discussion—but bring us some kind of report.

Dr. G. T. Swarts, Rhode Island: Six or seven years ago I went to South Carolina, where they had pellagra. As soon as I discovered what it was, I went home, and found a case. We have had sixty cases since then. Did I carry it from South Carolina?

Within a few weeks I have had another true case of pellagra, which was uninfluenced by symptomatic treatment. After reading Dr. Goldberger's report I changed the diet and the man proceeded to get well. The case cited by the gentleman from South Carolina is interesting—interesting because this man's children went to a store nearby and stole sausages, etc. To me this would indicate that the children had unconsciously discovered that they had an unbalanced diet and were automatically correcting it. What we have to tell the people is this: Just quit doing what you do and do what you don't do, for what you don't do may agree with you as what you do do don't.

Dr. H. M. Bracken, Minnesota: This can hardly be considered a committee report. I cannot move its acceptance, but I move that the committee be continued.

Dr. Goldberger: I do not want to discuss this motion at all. I just want to say for myself that I am altogether too busy with field work to prepare a report of this character, and I would deem it a favor to be relieved of this duty. I think it would probably be better for the Conference and for the committee if some other person took my place on the committee.

Dr. Bracken's motion, to continue the Committee on Pellagra, was seconded and carried.

REPORT OF COMMITTEE ON RELATION OF FEDERAL AND STATE AUTHORITIES IN SANITARY REGULATION OF COMMON CARRIERS

The report was presented by Dr. E. R. Kelley, Massachusetts, chairman.

The committee on this subject cannot make a progress report. It can make a stand-still report. During this year we have made some endeavor to get all the data available on this question. As you know, in the Surgeon General's conference a resolution was passed and a committee appointed to do precisely the same work.

I have endeavored by correspondence to discover whether anyone had a new idea on this subject. Dr. McCullough said that Canada was too busy with war, and Dr. McGurren could not do anything about it, and finally our standby, Dr. Crowder, went back on us this year. So the committee has nothing to report. I would suggest that it be either discharged or continued simply as a committee to confer with the practically identical committee appointed by the Surgeon General.

Upon motion it was decided to accept the above as the report of this committee, and the committee was instructed to coöperate with the committee appointed by the Surgeon-General.

REPORT OF THE COMMITTEE ON MODEL STATE, DISTRICT AND COUNTY HEALTH LAWS

This committee made no report, the chairman, Dr. Sumner, being ill.

REPORT OF COMMITTEE ON COURSE OF STUDY IN SANITATION FOR WOMEN'S CLUBS

This report was presented by Dr. Charles H. Lerrigo, Kansas.

I appreciate this opportunity of appearing in Dr. Crumbine's stead. While Dr. Crumbine's report is not available at present in detailed form, it should have some mention, because it refers to a matter that will be of interest to every officer of a state board of health in years to come. It is in reference to education. You will remember the address of our President this morning, in which he spoke of education versus law. Any of you gentlemen would be particularly interested in a concrete illustration that came to the notice of Dr. Swarts and myself just a short time ago. We came upon a bellboy carrying a supply of ice water to a room. Having a thirst of his own, he had just concluded a long draught from the pitcher.

Dr. Crumbine's report is in reference to a course of study to be taken up not only by women's clubs, but also by men's clubs or by any kind of organization. The report is now, I believe, in the press of the American Medical Association. It contains a very extended course of study, with references, etc., and various outlines with the particular detailed manner in which these studies may be carried on. It is intended and recommended for distribution through the National Federation of Women's Clubs. It is expected that Mrs. Helen Louise Johnson may join us in distributing it through the Federation. It is also hoped that boards of health, through their executive officers, will assist in the distribution of this plan of study.

On behalf of Dr. Crumbine, I would like to give the Conference his good wishes, and I wish to say for him that he is standing his recent heavy bereavement as would be expected from a Christian gentleman of his character.

On motion, the report of the Committee on Course of Study in Sanitation for Women's Clubs was accepted.

REPORT OF COMMITTEE ON RECENT ADVANCES IN SANITARY LAWS, ORGANIZATION AND PRACTICE.

The report was read by Dr. John L. Burkart, chairman, and is as follows:

Your committee on Recent Advances in Sanitary Laws, Organization, and Practices respectfully submits the following report:

A circular letter was prepared and sent to sixty Boards of Health located in the Provinces and States indicated by the list furnished your Chairman by the Secretary of the Conference under date of March 25.

Replies from 34 States and Provinces have been received. Possibly some of the information furnished is not new. Your Committee is of the opinion, however, that this report embodies in brief form the most important advances along the lines indicated by the title of the report. We invite correction of this report by the various representatives assembled here, as we recognize the fact that it is a difficult matter to secure and compile the information which should enter into a report of this kind in the brief space of time afforded us.

Arkansas.—No recent amendments to the sanitary laws, organizations and practices since 1913 is revealed by reviewing the report furnished your Chairman by the State Board of Arkansas. The Revised Rules and regulations bear no mark of recent revision.

California.—Newer developments in the work of this very active Board of Health show the establishment and maintenance of a Bureau of Sanitary Engineering, with full-time engineer; an enlarged bureau of tuberculosis which administers the state subsidy to county tuberculosis hospitals.

An unusually vigorous campaign against rabies is being conducted under the provisions of Chapter 369, Statutes of 1913, which may be found in the "General Health Laws" pamphlet issued by the California Board. The campaign involves trapping, hunting and poisoning, as the disease has become prevalent among the coyotes. The results seem highly successful.

Typhoid fever, malaria and diphtheria prevention has been given renewed attention, and special emphasis has been placed on the danger of typhoid and diphtheria "carriers." Restrictive measures have been adopted and enforced.

The press service is being extended and seems to be accomplishing the desired object, as the typhoid incidence has been decreased. On the whole, California seems to be making satisfactory progress in every line of public health work.

Colorado.—The annual report of the Colorado State Board of Health, under date of February, 1916, does not show any recent change in the public health laws of the State.

Under date of February 7, 1916, Regulations and Rules for the prevention of diseases and protection of human life were adopted. All prior Rules and regulations were repealed upon the adoption of the new code.

Reportable diseases are grouped as follows:

GROUP 1. Communicable Diseases.

Actinomycosis.
Anthrax.
Chancroid.
Chickenpox (Varicella).
Cholera, Asiatic.
Dengue.
Diphtheria.
Dysentery Amoebic, Bacillary.
Erysipelas.
Favus.
Foot-and-Mouth Disease (Apthous Fever).
German Measles.
Glanders (Farcy).
Gonococcus Infection.
Hookworm Disease.
Impetigo Contagiosa.
Leprosy.
Malaria.
Measles.
Meningitis, Epidemic (Cerebro-spinal).
Mumps.
Ophthalmia Neonatorum.
Paragonimiasis.
Paratyphoid Fever.
Plague.
Pneumonia.
Poliomyelitis, Acute.
Puerperal Septicemia.
Rabies (Hydrophobia).
Relapsing Fever.
Rocky Mountain Fever (Spotted or Tick).
Scabies (Itch).
Scarlet Fever.
Septic Sore Throat.
Smallpox.
Syphilis.
Tetanus.
Trachoma.
Trichinosis.
Tuberculosis.
Typhoid Fever.
Typhus Fever.
Undulant Fever (Malta Fever).
Whooping-cough.
Yellow Fever.

GROUP 2. Diseases of Uncertain Origin.

Cancer.
Pellagra.

GROUP 3. Occupational Diseases.

Arsenic Poisoning.
Brass Poisoning.
Carbon Bisulphide Poisoning.
Lead Poisoning.
Mercury Poisoning.
Naphtha Poisoning.

Carbon Dioxide Poisoning.	Poisoning by Nitro-oxide Fumes.
Carbon Monoxide Poisoning.	Silver Poisoning.
Cyanide Poisoning.	Wood Alcohol Poisoning.
Dinitrobenzine Poisoning.	Any other disease or disability due
Illuminating or Fuel Gas Poisoning.	to the nature of employment.

Vital statistics, regulation of embalmers, disinfection, instructions relative to sending specimens to the laboratory, water analysis, and many other subjects are included in the extensive and excellent compilation of the Rules and Regulations published by the Colorado Board.

District of Columbia.—The Health Department is being conducted under the laws and regulations relating to public health in the District of Columbia, as outlined in a pamphlet issued January 1, 1913. No recent changes in sanitary laws or organization are reported.

Recent additions to the regulations adopted December 3, 1915, prohibit the use of the common drinking cup, the common towel, the common use of certain toilet articles, and surrounds the serving of food in public places with necessary safeguards. Penalties are provided for violation of the foregoing regulations.

Under date of April 2, 1915, the business of disinfecting or fumigating is defined, and all persons engaged in such business are required to register in a book provided for that purpose by the Health Officer of the District of Columbia.

The annual report, June 30, 1915, shows no change in the methods employed for the supervision of the work in the Health Department.

The press service gives evidence of the alertness of the department and reflects credit upon the administrative head.

Florida.—The State of Florida has been unusually active during the past year. The most notable additions to the sanitary laws are acts governing water carriage and surface closet facilities for school buildings, screening of food, provision for sanitary privies in municipalities, creation of a bureau of vital statistics, medical inspection of school children and last, but not least, a public health exhibit train of three cars. An outline of the organization and administration furnished by Dr. Porter, the secretary, shows that the State has been divided into seven districts. Each district is under the supervision of an assistant to the state health officer, whose duties are those ordinarily assigned to such officers.

Four sanitary patrolmen are employed and are stationed in Jacksonville, Tampa, Pensacola and Key West, respectively.

County agents are employed in three counties of the State. They are part-time men, and receive a salary of $600 per annum.

Six public health nurses are employed by the State Board. Their work is principally in the anti-tuberculosis field, but is not confined to the control of this particular disease.

Isolation hospitals are maintained at Jacksonville, Tampa, Pensacola, and Miami, for the care of smallpox cases.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

The legislature of 1915 enacted a statute providing for the medical inspection of every child, white or colored, attending any school, public or private, within the State. This bill was passed by the legislature without consultation with the State Health Officer and is faulty in many respects. No provision was made for an appropriation to carry on this work, which, if conducted properly and in accordance with the provisions of the law, would entail an expense of from $80,000 to $100,000 per year. However, an attempt is being made to put the law into effect, and inspectors have been appointed by the county commissioners of the various counties of the State and have been approved by the State Health Officer. The fee which the State Board has been able to pay barely covers the actual expenses of the examinations required. Very little advance can be expected until a proper appropriation has been provided.

Smallpox vaccine is distributed free of charge to any citizen of the State of Florida. Diphtheria antitoxin is furnished free of charge to indigent cases, either for therapeutic or prophylactic purposes, upon certification of indigency furnished by the attending physician. By special contract with the National Vaccine and Antitoxin Institute, one or more distributing stations have been established in every county in the State, where diphtheria antitoxin may be purchased at the following prices:

1,000 units	$ .60
5,000 units	2.30
10,000 units	4.10

Typhoid vaccine is furnished for prophylactic purposes upon the same conditions and is retailed at the distributing stations at the following prices:

3 ampule pkgs	$ .50
3 syringe pkgs	1.05
30 ampule pkgs	2.40

Anti-rabic vaccine is mailed direct from the manufacturer to the attending physician upon request of the State Health Officer. This product is furnished free to the indigent cases, but the State Board of Health is reimbursed for that distributed under this arrangement to cases not indigent at the rate of $20 per complete treatment.

Tetanus antitoxin is furnished to indigent patients for prophylactic purposes only. It may be purchased at retail by physicians, through a central distributing station at Jacksonville, at 40 per cent less than list price.

Weekly press bulletins are mailed in mimeograph form to all newspapers in the State. Monthly bulletins, "Florida Health Notes," are distributed free of charge to any citizen of the State. A mailing list of about 7,000 is shown.

The educational health exhibit, consisting of panels, charts, models and electrical devices, which has been in use for the past year, together

with some additional material just added, has been permanently mounted in three converted Pullman cars, purchased for this purpose, and will in the future be constantly on the road, stopping at practically every railroad station throughout the State. In connection with this exhibit, the Board has some ten or twelve moving picture reels and some 300 or 400 lantern slides relative to public health and sanitation.

A public health library containing all standard works and periodicals of value or interest to the public health worker is maintained in the State Board of Health building at Jacksonville. This library is open to all physicians in the State.

The legislature of 1915 provided for a bureau of vital statistics and enacted a "model state law" for the registration of births and deaths.

A central laboratory is maintained at Jacksonville and five branch laboratories are operated at Tampa, Pensacola, Key West, Tallahassee and Miami, respectively. A total of nine bacteriologists are employed. Free examinations of all specimens required for the diagnosis of the dangerous communicable diseases are made. A veterinary division is maintained and a chief veterinarian and two field assistants are employed. The duties imposed pertain to the care and prevention of dangerous communicable diseases in animals.

The United States Public Health Service, at the request of the State Health Officer, sent Dr. Carroll Fox, U. S. P. H. Service, to Florida in January, 1916, to make a survey of public health laws and administration. His report will be or is available at the present time.

"The Keystone," published by the Southern States Insurance Company, Atlanta, Ga., in the April number shows photographs of the Florida health train, exterior and interior. They are in the hands of the committee and may be used by members of the Conference who have a desire to do so.

Georgia.—Georgia reports no change since the last meeting of the Conference.

Hawaii.—The Board of Health of the Territory of Hawaii under date of October 1, 1915, published a pamphlet containing the Public Health Laws and Sanitary Code governing the Territory. The Sanitary Code was adopted at a meeting of the Board May 27, 1915. The regulations govern buildings, plumbing, housing conditions, restaurants, bakeries, markets, dairies and dairy premises, milk, abattoirs, laundries, barber shops, drugs and chemicals, interment and disinterment of dead bodies, deaths from contagious or infectious diseases, nuisances, flies, mosquitoes, etc. The report of the President for the year ending June 30, 1915, shows very satisfactory progress in all departments. The Bureau of Vital Statistics particularly merits praise for the excellent report rendered June 30, 1915. The administrative work is highly commendable.

Illinois.—Great progress has been made in Illinois by recent legislative enactments having sanitary significance. The State has been divided into five sanitary districts, over which a full-time health officer presides, under the direction of the Secretary of the State Board of

Health. This guarantees that each district will have a competent health officer continuously on duty, prepared to answer all calls, always in close touch with the State Board, and available in emergencies. Among the duties of the District Health Officer, one of the most important is the organization of conferences or schools for local health officers in their various districts. Your committee considers this an excellent idea.

A state epidemiologist has also been provided for, acting under the direction of the secretary of the Board. He is to settle disputes in diagnosis, and when epidemics occur he will be required to take charge of the infected community.

A Bureau of Sanitary Engineering has also been created and is rendering good service, particularly in typhoid fever outbreaks, establishing safe water supplies, educating the people how to prevent future infection and in other ways assisting to curtail the ravages of unnecessary diseases.

The free laboratory service of the Board has been extended and branch laboratories have been established at Chicago and Mount Vernon.

Several of the laws passed by the 49th General Assembly of Illinois, while applying only in a limited way to the public health, impose new duties on the State Board. Notably, the law authorizing the establishment of tuberculosis sanatoria by special tax in counties provides that all county sanatoria so created must meet the approval of the State Board.

The State Board is also required to co-operate with the State Superintendent of Public Instruction and State Architect in establishing standards of sanitation for school buildings and condemning school buildings deemed unsafe.

The publications of the Board show careful supervision and are up-to-date. Altogether, Illinois has made wonderful progress, and the many commendatory remarks for the Illinois Board and its hustling and efficient secretary are well earned and appropriate.

Indiana.—The State Board of Health of Indiana always has something new and startling to offer and the latest contribution is a publication entitled "Baby Book," which Dr. Hurty declares is probably "the most important work done in late years. The demand is enormous and the book has brought the mothers and babies of the state into very close relation with the State Board of Health. Hundreds of women who never heard of the State Board of Health are now with us and are pleading the cause of public health and preservation of child life:"

"The State Board of Health has already sent forth its rules and blanks which require the medical inspection of all employes in all food producing and food purveying establishments. Employes of restaurants, hotels, and wherever food is handled, must present certificates like the one enclosed," writes Dr. Hurty.

Continuing, he further says: "Under a law passed by our last legislature in 1915, we are putting forth effort to collect reports of cases of consumption according to the postal card herewith enclosed. Our success is not startling, for we have probably 50 per cent of the doctors to fight.

It may be a larger percentage. The State Society and the County Societies all stand by us, but these societies do not enroll more than 30 per cent of the doctors of the State.

"We have also started the work of collecting statistics of the venereal diseases, but haven't got very far yet. The plan adopted was the same as the New York City plan, which is succeeding pretty well. Collection of statistics involves an enormous expenditure for stamps, and lack of money for such purposes holds back the work which should be done.

"The organization of the Indiana State Board of Health remains as heretofore, with the exception of the addition of another bureau, and we shall ask the next legislature for the money and authority to establish a bureau of child hygiene. The last bureau added is that of Epidemiology. A graduate of the Harvard School of Hygiene has been engaged to start the work April 1. Our organization is now as follows:

1. Executive.
2. Accounting.
3. Statistical.
4. Food and Drugs.
5. Water and Sewage.
6. Bacteriology and Pathology.
7. Pasteur.
8. Epidemiology.

Iowa.—Under date of March 27, Guilford H. Sumner, Secretary-Executive Officer, reported that "The Iowa Board has nothing to report upon the two topics 'Recent Advances in Sanitary Laws,' and 'Organization and Practices,' hence I cannot give you any information, as there are no new laws and practices different from two years ago."

Kansas.—This State Board recently (March 20, 1916) passed some excellent rules and regulations which apply to abandoned wells, privy vaults, cesspools, drains, nuisances, including refuse matter, pig pens, unwholesome manufactories, slaughter houses, the sanitary control of public buildings, annual inspection of public institutions. New regulations for the control of communicable diseases also received attention at the meeting herein referred to. Public funerals are prohibited in cases where death has occurred from any contagious disease. Transportation of bodies dead from contagious disease, such as smallpox, diphtheria, scarlet fever, measles, whooping cough, erysipelas, etc., is prohibited. No person suffering from gonorrhea or syphilis is to be permitted to take a bath in a public bath room in the state of Kansas, nor shall any person suffering from syphilis be served in any barber shop. This prohibition is to obtain until 12 months have elapsed from date of infection. The laboratory is authorized to give free examinations of sputum and swabs from suspected diphtheria cases, suspected gonorrhea, blood, for malarial organisms, Widal reaction for typhoid fever and the examination of the brains of animals suspected of having rabies, for all legally qualified physicians in the State. State quarantine, when necessary, has also

been provided for. The disinterment and transportation of dead bodies has been surrounded with every precaution. The Child Welfare Bureau of the Kansas State Board of Health deserves more than ordinary notice, and too great praise cannot be given for the excellent press notices and special posters, which this Bureau has gotten out. The bulletins of the Board maintain their excellence and always contain snappy and attractive stuff which must appeal to the people. The Kansas Board is always in the van.

Louisiana.—The Sanitary Code of Louisiana has recently been amended and rat-proofing ordinances enacted.

The Medical Practice Act has received considerable attention and appears to be in excellent form, judging from the printed copies furnished your Committee. Especial attention has been directed to the inspection of boats, which are now required to be disinfected and fumigated under the rules and regulations of the Board before leaving the port of New Orleans for points in the State.

Pellagra, trachoma, hookworm, malaria and whooping cough have recently been made reportable diseases and physicians are required to report to the local health officers promptly upon the discovery of any of the diseases named.

School houses have received attention at the hands of the Board and it is now prescribed that the floor of every school house must be treated with some antiseptic floor dressing. These applications are to be made at sufficient intervals to keep down the dust. The floors are to be scrubbed thoroughly before the application of the antiseptic. Manufacturers and dealers in floor dressings are compelled to give the State Board of Health satisfactory evidence of the efficiency of their product.

Public conveyances and stations are required to be cleaned, cars and waiting rooms are to be ventilated, certified ice and drinking water are to be supplied.

All individuals conducting dairies and supplying milk are required to show certificates from the State Board of Health guaranteeing the safety of their product. All milk products which score below 50 on the score card of the State Board of Health and milk sold by or from a milk plant which scores below 70 shall be considered as produced and handled in an improper, unclean and insanitary manner. Persons conducting dairies are required to keep the animals and the stables clean. The use of open top pails for milking or pails not covered so as to prevent contamination is deemed unclean. Cows should not be fed upon distillery wastes or any substance in a state of fermentation or putrefaction, swill or unhealthy food. Proper rooms for the handling of milk must be provided. All milk must be bottled at the dairy, creamery or distributing plant. Bottling on the street or on vehicles of any description is prohibited. Milk cans are to be thoroughly cleansed before being returned. If not safe, they are to be labeled as being unclean and not fit for carrying or storing milk intended for human food. All persons suffering with any of the communicable diseases are prohibited from milking, mingling with

the milkers or handling the utensils or products. Provision is made for furnishing certified milk; pasteurization is defined and, in many other ways, the necessary safeguards are placed around the production and sale of dairy products.

The occupation of fish markets for domestic or sleeping purposes is now prohibited.

Proprietary and patent medicines intended for internal human use are subject to necessary restrictions.

Maine.—The January Bulletin of the State Board of Health of Maine contains rules and regulations relative to infectious and contagious diseases. The term infectious and contagious diseases is declared by the Board to mean simply a communicable disease, which is a very sensible advance in nomenclature.

A list of notifiable diseases is furnished and all physicians, householders and other responsible persons are required to report to the local board of health.

Full quarantine and modified quarantine are explained and the significance of the term "under observation" is given.

Milk delivered to households where any of the dangerous communicable diseases exist must be supplied in containers which shall not be used again. The vendors are not permitted to enter upon the premises nor take anything therefrom until the house or premises have been released from quarantine and disinfected. Considerable stress has been laid upon the necessity of guarding against infection through the means of books from school and in circulating libraries. Teachers are required to report any suspicious symptoms in any of their pupils. Physicians are required to arrange for precautionary measures immediately upon discovering a case of infectious disease. They must also report the existence of any of the communicable diseases existing on dairy farms or other places where milk is being handled, produced or distributed for human consumption. Household pets, such as cats, dogs, etc., are to be excluded from sick rooms.

The publications of the State Board of Health of Maine are very readable and highly instructive and every evidence of progress is visible in their work.

Maryland.—The legislature of Maryland has recently added to the duties of the State Department of Health by abolishing the State Vaccination Agency and transferring the duties of that office to the Department of Health. They have also passed a bill providing for the inspection and license of cold storage warehouses. Unfortunately, no appropriations were made for the performance of these functions.

Minor changes were also made in the laws relative to local boards of health and vital statistics. The most important new practice in the past two years has concerned the county sanitary surveys and the operations in sanitary engineering. The State is now divided into ten sanitary districts, each to be supervised by a physician, who must be trained in public hygiene and must have no outside occupation. Within each

sanitary district, the Deputy State Health Officer is possessed with all the powers of the State Health Officer, under the direction of the latter, however. Eight of the districts are supplied with deputies. Two complete surveys have been made in two years. Each of these surveys was made in co-operation with the United States Public Health Service.

The State is divided into four Engineering districts and each district is supplied with a resident sanitary engineer. The law of 1914 was thought to be rather drastic in its first two years; however, it has made many friends and has now a good chance to remain unimpaired.

Chapter 675 of the Laws of Maryland is an act to repeal Sections 2 and 5 of Article 43, of the Code of Public General Laws of Maryland, entitled "Health." Section 2 of this act gives the State Board of Health general care of sanitary interests of the people of the State and requires them to make sanitary investigations and inquiries respecting the cause of disease and especially epidemics; the causes of mortality; the influence of locality, employments, habits and other circumstances and conditions upon the health of the people; they shall also inquire into and investigate all nuisances. This law has been found very effective and bids fair to reform the habits of the people in respect to elementary hygiene and sanitation of habitations.

The law known as Chapter 810 has been found very effective in respect to community action on such matters as water supply, sewerage and disposal of wastes.

Maryland seems to be keeping in the van of progress.

Massachusetts.—The State Department of Health of Massachusetts, under its new organization, headed by its very competent commissioner is living up to the expectations of her sister states who have so long looked to Massachusetts for guidance in formulating rules and regulations and public health laws. The regulations concerning the use of the common drinking cup were amended March 23, 1916, by the adoption of the following: "or in any department store, in any part of any factory, office building or store of any kind which is open to the general public." The same addition to the act to restrict the use of the common towel is also noted.

False stamping and labeling of receptacles containing articles of food and misrepresentation in the sale of food products have been given proper attention.

Chapter 57 of the General Act, approved March 21, 1916, provides that every city or town which places its patients suffering from tuberculosis in a municipal or incorporated tuberculosis hospital in the commonwealth of Massachusetts or in a building or ward set apart by a municipal or incorporated hospital in Massachusetts for patients suffering from tuberculosis shall be entitled to receive from the commonwealth a subsidy of five dollars per week for each patient who is unable to pay for his or her support or whose guardian bound by law to maintain him is unable to pay for the same.

Under a revision of the law relative to nuisances, sources of filth and cause of sickness in general, power is given to the Board of Health to

destroy nuisances, make regulations relative to them, regulate house drainage and connection therewith of the public sewers, regulate the location of privies and declare vaults a nuisance and forbid their continuance, condemn unfit dwellings, order improvements, and cause removal of occupants; and boards of health may enter premises for various purposes and if obstructed shall have assistance; wet land and stagnant water to be deemed a nuisance; hearings upon methods of payment, questions of damages, the assignment of expenses by the Board of Health are provided for; and, in many other ways, the Board is empowered to exercise police power.

The reorganization of the Department of Health of Massachusetts, under Act No. 792 of Acts of 1914, seems to be an improvement over the former method.

The prevention of disease is dealt with in a pamphlet entitled: "Laws Relative to Prevention of Disease." A similar pamphlet entitled: "Treatment of Diseases," shows how persons infected with any of the dangerous communicable diseases are to be cared for by the local courts. Syphilitic persons are required to be isolated. Persons in a jail or workhouse may be removed to a hospital or other place of safety until danger is passed.

Power is given the State Department of Health to inspect fish, vegetables, meat, and all other provisions; and the rules and regulations governing the business of cold storage made under the provisions of Chapter 602, 1912, were amended March 23, 1916, to read as follows: "Broken eggs, packed in barrels, kegs and cans or any other container, if not intended for use as food, shall be mixed with not less than 10 per cent of salt, and marked by the owner, when deposited in cold storage, with a stamp or label reading: 'Not for food'."

A Wassermann laboratory offering free State service to State institutions, local boards of health and, under certain conditions, to private physicians when application is made through the District Health Officer, has been provided.

Tuberculosis has received the necessary attention at the hands of the State Baord and an amendment to Section 4 reads: "Cities having more than 50,000 inhabitants within the meaning of this act and also cities having less than 50,000 inhabitants within the meaning of this act and already possessing and continuing to furnish adequate tuberculosis hospital provision according to Section 3, shall be exempt from the provisions of this act and shall not be required to pay any part of the county tax which is assessed in order to comply with the provisions of this act."

County commissioners, under a recent amendment, are authorized and directed to raise and expend such sums of money for acquiring land and constructing and equipping hospitals as may be necessary to carry out the provisions of this act. When a hospital is completed and equipped the county commissioners shall determine the cost of the same and, in other ways, provision has been made for proper hospital facilities for tubercular patients throughout the State.

December 14, 1915, the Public Health Council, Department of Health, Massachusetts, amended their list of diseases reportable by physicians, householders, and local boards of health, because considerable dissatisfaction with the poor effect of the ruling of 1914 was exhibited by the larger boards of health. The list of reportable diseases, as it now appears, includes 21 and apparently covers all the requirements.

At a meeting of the Public Health Council, January 1, 1915, the rules and regulations governing the appointment and promotion of District Health Officers was adopted. Grades have been established as follows: A, B, C, D, the salary respectively being $3,500, $3,000, $2,500 and $2,000.

Provision is made for promotion by reason of service and other qualifications. The age limit, which was 32, has been waived. These appointments are secured by examination.

Slaughter houses, slaughtering of animals for human consumption, and the inspection of meats, canning and other methods of preserving meat receive proper inspection.

The literature of the Massachusetts Board is, as we might expect, of the highest standard and is always read with great interest.

Michigan.—No new laws are reported from Michigan. A few minor amendments to already existing enactments were passed by the legislature of 1915, as follows: All boards of health and every health officer must comply with and enforce the public health laws of the State and the rules and regulations of the State Board of Health. Failure on the part of the physician to report any of the communicable diseases is now deemed a misdemeanor and punishable by a fine of not less than $10 nor more than $50 for each offense; in default of payment of fine, imprisonment.

The Secretary of the Board must be recommended for appointment by the Board and must be an M. D. of at least 10 years' experience in the practice of medicine, and otherwise qualified for the position. The amount of money available for the establishment and maintenance of county hospitals for the care of tubercular patients is provided by a tax not to exceed .5 per cent of the general fund for any one year, unless submitted to a vote. Heretofore the amount was limited to $1,000 per year, which was inadequate.

The special appropriation of $50,000 a year, for two years, beginning July 1, 1915, for the purpose of conducting a tuberculosis survey and campaign against that disease was reported at last meeting of the Conference. The work was begun in October, 1915, and is progressing with that measure of success which time alone will tell. Up to May 1, 1916, fourteen counties have been covered, 5,500 persons examined, over 1,300 of whom were found to be positive cases, over 1,000 deemed suspicious and balance negative. The plan of campaign will be found outlined in a leaflet which the State Board of Health has published. A special committee, consisting of five members of the Board, including the secretary, was appointed to formulate plans which were to be carried out by

a force of medical men, nurses, and other experts. We employed a medical man as Director of Field Work, and gave him the privilege of selecting his own assistants, subject to the approval of the Board. The present force consists of the Director and two assistants, a superintendent of nurses, assistant superintendent and 12 visiting nurses, a housing expert, a publicity agent, and a number of experts on tuberculosis who receive a per diem and expenses when on duty examining patients at the public clinics, which occupy from 3 to 5 days in each county.

New and revised rules and regulations in relation to communicable and reportable diseases were adopted September 1, 1915. Twenty-eight diseases are now made reportable.

The publications of the Board have increased materially. The monthly bulletin mailing list exceeds 20,000 and is increasing every month, requests from every state in the Union, Canada and P. I. are being received. The special literature on tuberculosis, consisting of 100,000 copies published in July, 1915, is about exhausted. Special pamphlets on the communicable diseases are being sent upon request to many schools throughout the country. The sanitary engineering force has been increased and their activities extended. We now have a corps of five sanitary engineers, known as acting medical inspectors, constantly on duty. Sanitary surveys have been and are being constantly made. The water and sewage disposal systems of every city and village are supervised; special surveys to determine the source of typhoid infection have led us into some interesting discoveries concerning milk contaminated by typhoid "carriers" employed on dairy farms. Bulletins on various sanitary engineering problems are being issued.

The publications of the Board have increased over 100 per cent in 12 months. Moving picture reels have been added to the means of bringing the dangers of the fly, insanitary farming, bottle-fed babies and tuberculosis to the notice of the public. Good Health Week and recently "Baby Week" work has taxed the capacity of the entire force. Child welfare work has been taken up in a limited way, due to lack of funds for that purpose.

Montana.—A pamphlet entitled "Public Health Laws and Regulations of the State Board of Health of the State of Montana," compiled at the office of the Secretary of that Board, April 4, 1915, affords the only information furnished your Committee by the State of Montana.

The State Board of Health, under provisions of Chapter 1, Article 3, Revised Code of Montana, 1907, is given control of the public water supply of the State, and shall exact from municipalities maps, plans, and documents necessary to locate various inland waters, streams, lakes and ponds used by any city, town or public institution or by any water or ice company in the State. The pollution of a water supply is prohibited under the same act.

It is also prohibited to construct, build, establish or operate any railroad, logging road, logging camp, electric plant or manufacturing plant of any kind upon or over any water shed of any public water supply

system unless such corporation, company or person shall protect such water supply from pollution by such sanitary precautions as shall be approved by the State Board of Health.

Experiment stations for the purpose of studying the best methods of preventing pollution of water and for the purification of water and for the purification, disinfection and disposal of sewage and domestic and manufacturing wastes are authorized. Communicable diseases receive the necessary attention and health officers are compelled to investigate on suspicion.

Quarantine regulations are established by the Board.

The protection of school children receives attention. Certificates of health are required after exposure to infection. There are also some very good sanitary provisions for heating, lighting, ventilating and furnishing water supply and water closet facilities for school houses. Health officers are compelled to inspect public buildings.

Camp sanitation receives considerable attention. Bodies dead of dangerous communicable diseases are required to be prepared in accordance with the rules and regulations laid down for the government of licensed embalmers, over which the Board presides.

Special Bulletin No. 5, issued at Helena, April 2, 1916, contains some excellent information relative to cleaning up, the protection of public and private water supplies, back yards and garden places and the dangers of the house fly as a carrier of typhoid fever, tuberculosis and summer diarrhea.

Nebraska.—Nebraska reports, under date of March 3, 1916, that there has been no change in the sanitary laws in the last four years.

New York.—Inasmuch as New York is the Empire State of the Union, we naturally expect her to lead in public health as well as in other matters, and a close supervision of the public health manual of 1914 furnishes convincing proof that our expectations have been realized.

The Sanitary Code has been amended in several respects; but space will not permit more than a few allusions to recent rules and practices, and your Committee respectfully refers the members of the Conference to the published literature of the New York Board for further information. Under date of December 23, 1915, the Commissioner of Health sent out a circular letter to presidents of boards of health in towns and villages, warning against the practice of charging municipalities for various services performed by them in accordance with their official duties, in addition to the regular minimum compensation provided by the Revised Public Health Laws of 1913. In this circular the attention of the health officer is called to the form of report which the Commissioner requires. Copies of these laws and the report are on file with your committee and may be procured undoubtedly from the Commissioner of Health of New York.

No commendation of New York's publicity work or her organization need be given, as in all general public health activities the Empire State is in the front rank.

North Carolina.—Your committee feels that the activities of the State Board of Health of North Carolina have become so conspicuous within the last two years and so many stunts are being pulled off that it is impossible to keep accurate tab upon the new things. Among the more recent advances, we notice the use of a traveling moving picture exhibit which has been touring the State under the supervision of Mr. Warren H. Booker.

Anti-typhoid vaccination has been given great emphasis.

The daily press service of North Carolina is unquestionably among the best, if not the best, furnished by any State Board. We in the North do not realize what difficulties are met with in the dissemination of public health knowledge and the enforcement of sanitary laws in the South. Climatic conditions unknown to the North increase the necessity of continuous vigilance on the part of the health officers in the South.

North Carolina has undoubtedly been equal to the task imposed.

Ohio.—Among the more recent laws enacted by the State of Ohio is House Bill No. 470, passed by the General Assembly of Ohio, May 19, 1915, adopted by the State Board of Health and effective August 20, 1915. This is entitled "An Act for the prevention of blindness from inflammation in the eyes of the new-born," and provides that physicians must report the existence of any inflammation of the eye that occurs within two weeks after the birth of the infant. The State Board of Health is obliged to enforce the provisions of this act. A penalty is provided for violation and an annual appropriation of $5,000 is made for the purpose of enforcing and carrying out the provisions of the act.

Under the more recent rules and regulations adopted by the Board is the mandatory provision relative to ice cream parlors and soda fountains being kept in strictly sanitary condition by affording facilities for the sterilization of all glassware and other utensils used in the serving of ice cream or any of the customary drinks supplied from soda water fountains.

Government of maternity boarding houses and lying-in hospitals is outlined in a comprehensive circular sent out by the secretary and executive officer of the Board, under date of January 16, 1916. Rooms and wards in maternity boarding houses and lying-in hospitals are compelled to be so constructed as to furnish one thousand cubic feet air space for each adult patient and 500 cubic feet for each infant kept therein. All rooms and wards must be outside rooms and the window space must be not less than one-fifth of the floor-space. Heating, ventilating, plumbing and drainage receive the necessary attention.

Ohio publishes excellent literature and her monthly bulletin probably ranks with the best in the United States.

Oregon.—Among the recent laws enacted, Chapter 73, General Laws, 1915, provides for the protection, conservation and purity of municipal and domestic water supplies in the State of Oregon, to prevent pollution of streams and to give the Board of Health authority in the premises. Under this act all incorporated towns and cities in the State which de-

sire to provide new water supply for drinking or culinary purposes must submit to the State Board of Health plans showing the source of the supply and the transmission and distribution systems.

Any city or town in the State proposing a sewer system or an individual or corporation proposing to install a system of sewerage or disposal of waste products for the use of more than five families of 50 persons, shall, before undertaking the work on the ground, other than making surveys and preliminary plans, submit to the State Board of Health full plans and specifications. Any violation of the provisions of this act is deemed a misdemeanor and punishable by a fine of not more than five hundred dollars. Chapter 210, G. L. 1915, is an act for the prevention of blindness, imposing a duty upon all midwives, nurses or other persons having the care of infants and also upon the health officer and fixing a penalty for the neglect thereof. Chapter 268, 1915, is an act to provide for the registration of all births and deaths in the State and fixing the penalties for the violation of this act and repealing Section 4697, Lord's Oregon Laws and all acts and parts of acts inconsistent with this act. This is quite comprehensive and if lived up to will provide satisfactory registration of births and deaths.

We have not been advised of any change in the organization of the Board, nor are we familiar with the literature published by the Oregon Board of Health.

Ontario.—Under date of March 27, Dr. J. W. S. McCullough, General Officer of Health, Provincial Board of Health of Ontario, writes that the Board has decided to abolish aerial terminal disinfection by use of such articles as formaldehyde, sulphur, etc., following communicable diseases. This law will go into effect after January 1, 1917.

A bill known as No. 64, entitled "An act to amend public health acts," provides regulations as to plumbing; enforcement of sanitary by-laws; the dismissal of a local health officer who refuses or neglects to carry out the provisions of this act or the regulations or any special order of the Provincial Board or any by-law of the municipality relative to sanitary matters; also provides penalty for selling biological products supplied by the Board. The province of Ontario is, at present, suffering from the effects of the war being conducted in the mother country. Problems in public health, except as applied to military economics, undoubtedly will receive very little attention until the close of the conflict which is now taking so many of Canada's noblest sons.

Pennsylvania.—A pamphlet issued June, 1915, by the State Board of Health shows the following new laws:

Authorizing certain cities of the third class to extend water pipes beyond the city limits.

Enabling townships of the first class to provide water supplies by contracting with other municipalities.

Amended Act 1913, relative to the establishment of boards of health in boroughs and townships of the first class and defining the powers and duties.

Conferring authority upon county commissioners to appropriate money for the maintenance of indigent residents who are patients in hospitals or sanatoria.

Authorizing boroughs to collect an annual rental from property abutting on sewers.

Amending the anatomical board established under laws of 1873.

Amending the Mattress Act of 1913.

Authorizing the commissioner of health to accept private donations for the purpose of erecting union chapels at tuberculosis sanatoria.

The state quarantine law.

Amending the marriage license law of 1905.

Regulating sanitary conditions in hospitals, restaurants, etc.

Prohibiting the construction of mausoleums in cities of the second class.

Providing for the expense of maintenance of inmates of hospitals and sanatoria.

Amending act of May 13, 1905, relative to registration of nurses.

Relative to indebtedness of municipalities.

Providing for construction of county sewers and disposal plants.

Providing for the registration of births, deaths, marriages and disease.

Additional rules and regulations of the board prohibiting firms, persons or corporations from exposing for sale on any sidewalk, pavement, or other exposed place any articles of food which are eaten uncooked, such as fruit, vegetables or other articles of food, unless thoroughly screened and protected from flies and unless they are on elevated stands at least 24 inches above the level of the sidewalk or pavement.

Physicians are required to report in writing to the health authorities of townships, cities or boroughs the presence of paratyphoid, anthracosis, arsenic poisoning and many other occupational diseases.

The bulletins of the Board are of the highest type and may be considered in many ways as classics. The Commissioner of Health is an unusually good writer of readable and instructive literature.

Philippine Islands.—No direct report has been received from the Bureau of Health. The last semi-annual report on file in the office of your chairman bears date of November 15, 1915.

The Health Service Reorganization Act known as act No. 2468 went into effect July 1, 1915.

Three principal features characterize the structure of the new law, which may be grouped as follows:

(1) A wise distribution of the supervising work with a responsibility proportionate to each office. The work which previously rested upon the shoulders of the Director and his assistant directly is now shared by four division chiefs, vested with executive authority from the Director.

(2) A better and more scientific classification of grades, including not only the entrance and promotion by examination, but a more equitable scale of salaries, which, however, as yet, because of lack of funds, has not reached the average of other bureaus.

(3) The quasi-military organization of the service and the adoption of a uniform.

The higher personnel has been constituted in the following manner:

Director.
Assistant Director, Division of General Inspection.
Chief, Division of Sanitation, City of Manila.
Chief, Division of Sanitation in the Provinces.
Chief, Hospital Division.
Assistant Chiefs, 12.
Medical Inspectors, 19.
Senior Surgeons } 40.
Junior Surgeons }

Assistant Surgeons of variable number are provided for in accordance with the needs of the service—18 have been appointed so far.

Divisions of Service are as follows:

Division of General Inspection.
Division of Sanitation—Manila.
Division of Sanitation—Provinces.
Division of Hospitals.
Office of Sanitary Engineer.
Office of Property.
Clerical Office.
Statistical Office.

Cholera, smallpox, varicella, bubonic plague, dysentery, typhoid fever, diphtheria, leprosy, measles, are the diseases reported present during the quarter.

The small number of smallpox cases reported is encouraging.

Quebec.—Under the date of March 29, Dr. E. Pelletier, Secretary and Director Superior, Board of Health, Province of Quebec, writes your chairman as follows:

DEAR SIR:—I beg to acknowledge receipt of your letter of the 25th inst.

About organization, I could mention the great advantage secured by the division made of the territory of province into ten Health Districts, with an inspector residing in each district. Although decided by the Board as early as December, 1910, the opening of the districts was deferred until 1912, as the Board had decided that appointments as district inspectors would be given to D. P. H. men only and that time had to be given to universities to give would-be applicants courses of instruction for the Diploma in Public Health.

Regarding advances in legislation, I might say that:—

Last year (1915), the Legislature of Quebec inserted into our Health Act the most excellent provisions of the "Bense Act" of the State of Ohio. These provisions are very useful to our Sanitary Engineering Division.

Attempt has been made to reduce the number of "missed cases" of contagious diseases by enacting articles 3b and 3c of our Provincial Health By-laws (copy enclosed).

The placarding of dark rooms (when they cannot be suppressed) so as to, at least, educate the people about them, is provided by a by-law (copy

enclosed) which has been praised by Tuberculosis League workers and also both local and foreign health authorities.

I do not know what other provisions of our health laws and by-laws might be quoted as not generally seen in the average health laws; anyway, under separate cover, I mail to you a complete set of the health laws and by-laws forming the "sanitary code" of the Province of Quebec, in case you should like to peruse them.

Yours faithfully,

E. Pelletier,
Secretary-Director.

A complete set of the laws of Quebec are furnished your Committee and they exhibit the fact that the Board of Health of the Province of Quebec is alive to the duties imposed. It cannot be expected that, in the great excitement of furnishing recruits for service in the British Army, much legislation will receive the attention of Parliament.

Texas.—The most noticeable activity of the Texas Board with which your chairman is familiar is a chart entitled "Ten Lessons in Communicable Diseases," which is put out in a very attractive form and sent to school teachers. No report from Texas has been received; the few remarks herein made apply to the writer's personal knowledge through correspondence with the Secretary of the Texas Board in 1915.

Dr. John L. Burkart,
State Board of Health,
Lansing, Michigan.

Dear Sir:—Replying to your letter of April 30th, will say that the Texas State Board of Health is making a Bubonic Plague survey on the coast of Texas. This required the formation of what we chose to term the Plague Commission, with chief director, engineers and laboratory equipment, to make a careful study of the conditions along the Gulf of Mexico bordering upon Texas. The chief director, Dr. A. L. Lincecum, can give you in detail the work of this Commission. My records are not complete yet on this new work.

We have also established an Anthrax Commission in the State Board of Health with Dr. W. A. Davis as chief director.

We have also begun an Intensive Health Campaign in three counties in our State for demonstration purposes. We intend to make model health communities in these counties so far as soil pollution with all of its incident diseases is concerned, also we are including the elimination of malaria, specializing along this line. This work has just begun under the direction of Dr. P. W. Covington of the International Health Commission, aided by the State Board of Health and the Extension Department of the University of Texas, coöperating with the counties. This in addition to the routine work of the State Board of Health, which is outlined in our Sanitary Code, is some of the work we are trying to do.

I might mention that we have endeavored to install a system of lectures illustrated by charts in all the free schools of our State. These lectures have proven very satisfactory and aroused the public's interest in State Medicine.

We have installed a Sanitary Engineering Department which is overhauling the sewerage and water supply systems of all the municipal governments of our State. This work is advancing nicely and I believe will be completed within the next twelve or eighteen months. If so this will indeed be a victory for the State Board of Health. Incidentally we are delivering lectures and addresses wherever possible with our limited force. This in a very brief way sums up some of the work we are trying to do.

By a contract with the biological manufacturers the State Board of Health has made an actual saving to the people of Texas in the cost of their products of $52,935 in a period of four months. You will readily see that in the course of twelve months, with the extension of this work and increased advertisement of this contract, it will amount to an immense sum. We are keeping a careful count of the amount sold and the difference in price will ultimately show the saving to the people.

It is impossible in a brief letter, as you know, to state to you in detail all of the work that we are doing, but rest assured with the small force to work with and the narrow appropriations to finance this work we are trying to do the very best we can.

Hoping this will be satisfactory, I am

Yours very truly, W. B. COLLINS,
State Health Officer.

Vermont.—Among the more recent laws enacted in Vermont probably the most important is the provision for the prevention of venereal diseases. Inasmuch as this act is brief, we are submitting it:

AN ACT FOR THE PREVENTION OF VENEREAL DISEASES.

It is hereby enacted by the General Assembly of the State of Vermont:

SECTION 1. A person who, knowing himself to be infected with gonorrhea or syphilis, marries shall be fined not more than five hundred dollars or imprisoned in the house of correction for not more than two years.

SEC. 2. A person who, while infected with gonorrhea or syphilis, has sexual intercourse shall be fined not more than five hundred dollars or imprisoned in the house of correction for not more than one year.

SEC. 3. A physician who knows or has reason to beleive that a person whom he treats or prescribes for is infected with either gonorrhea or syphilis shall immediately report the name, address, age and sex of such person to the secretary of the State Board of Health, for which report he shall receive the sum of twenty-five cents to be paid by the State Board of Health. A physician who fails to make such report shall be fined not more than two hundred dollars.

SEC. 4. The State Board of Health shall make and enforce such rules and regulations for the quarantining and treatment of cases of gonorrhea and syphilis reported to it as may be deemed necessary for the protection of the public. Said Board shall not disclose the names or addresses of such persons reported or treated to any person other than a prosecuting officer or in court on prosecutions under this act.

SEC. 5. During the months of January and of July of each year said State Board of Health shall pay to physicians all sums due for reports made under the provisions of this act.

SEC. 6. The sum of one thousand dollars is annually appropriated for carrying out the provisions of this act.

SEC. 7. Section 2 of No. 218 of the Acts of 1912 is hereby repealed.

The rules and regulations relative to communicable diseases adopted by the board May 16, 1915, show 29 communicable diseases on the reportable list, exclusive of tuberculosis and venereal diseases.

Public buildings are required to have fire escapes and satisfactory plumbing.

School buildings receive considerable attention. The selection of a site providing playgrounds, toilet rooms and out-houses, water supply, heating and ventilating, lighting and equipment are the terms dealt with in this regulation.

The bulletins of Vermont are very instructive and considerable attention has been paid to rural sanitation.

Virginia.—The General Assembly of Virginia in 1916 passed the following bills relating to the public health:

House Bill 182.—To protect the public health, to provide for the control and supervision of waters furnished to the public for drinking and domestic use, to define the duties of the State Board of Health in relation thereto.

Senate Bill 194.—To authorize counties and cities to establish sanatoria for the care of persons suffering with tuberculosis.

Senate Bill 99.—To prohibit the use of roller towels in public lavatories.

House Bill 465.—To restrain persons suffering from tuberculosis who, by reason of carelessness, are a menace to the health of their respective communities.

House Bill 258.—To amend and re-enact an act entitled An act providing funds to help maintain indigent consumptives at the Catawba Sanatorium, approved March 15, 1910.

Senate Bill 271.—To amend an act providing for the appointment of a State Board of Health, adding to the State Board of Health a dentist and a layman.

House Bill 324.—To authorize the State Highway Commissioner to establish a convict camp at Catawba Sanatorium for the purpose of constructing necessary roads, walks and such other improvements as may be agreed upon by the State Highway Commissioner and the State Health Commissioner, and prescribing the manner in which the expenses of such force shall be paid.

Washington.—The Commissioner of Health, Dr. T. D. Tuttle, under date of March 29, advises your committee as follows:

"Relative to recent advances and sanitary laws, organizations and practices, I beg to advise that there have been no changes in Washington during the last year. Our legislature meets next year, when we hope for some radical changes, but we might say the Health Department proposes, the legislature disposes."

A copy of the latest rules and regulations have been submitted to your committee, but inasmuch as nothing new is offered since the meeting of 1915, other than the customary excellent bulletins which are published monthly and are full of instructive and interesting reading, your committee has no further report to make.

West Virginia.—This State has made some rapid progress in the way of organization of the Board of Health, and your committee is in receipt of a draft of some new rules and regulations which became effective April 1 but, as yet, have not been printed. Under date of March 27, Dr. Jepson, the Commissioner of Health, advised your committee that

10,000 of their bulletins will be sent out as soon as published and by this means wide circulation will be accomplished. Since the last meeting of the conference, Bill 129, providing for the creation of the State Department of Health, defining its powers and duties, changing the name "State Board of Health," limiting and dividing its duties, amending the public health laws, investing the department of health with the management and control of the State Tuberculosis Sanatorium, providing penalties for violation, and appropriating moneys for purposes of public health, has become a law and is in operation.

Your committee is in perfect accord with this bill. Your chairman, in particluar, is firmly convinced that, until the reorganization of the various boards of health along lines indicated in the West Virginia plan, or some other equally meritorious plan, no great advance can be made in public health administration. A state department of health should be created in every state with a Commissioner of Health, responsible to the people, at the head. West Virginia is to be congratulated upon her organization of her health board.

Wisconsin.—Under date of March 28, 1916, the Board of Health of Wisconsin advised your committee as follows:

STATE BOARD OF HEALTH,
MADISON, March 28, 1916.

DR. JOHN L. BURKART,
Secretary State Board of Health,
Lansing, Mich.

DEAR DR. BURKART:—In compliance with your request of March 25th, we are forwarding you today copies of several recent public health laws, which, we believe, are along the lines of your inquiry.

We desire to call your attention especially to the list of reportable diseases found in Chapter 67; the new provision relative to the reporting of births and the adoption of the uniform law relating to the reporting of dangerous communicable diseases; Chapter 580, which authorizes the board to equip and maintain one or more branch laboratories, is a new departure and is one which, we believe, will aid materially in encouraging the cities to provide proper laboratory facilities, also employ full-time health officers. We believe that there are great possibilities in work in this direction and since the appropriation was made a number of cities have made application to have the laboratory located there, and in a few cases the city councils are making provision for the employment of full-time city health officers.

Any additional information we can give you along these lines will be sent at once upon request.

Very truly yours,
STATE BOARD OF HEALTH,
By L. W. HUTCHCROFT.

The Wisconsin Board appears to be increasing its activities and it is hoped the new legislative act will work out to the best interests of all concerned.

Wyoming.—Under date of March 28, Dr. W. A. Wyman, Secretary and Executive Officer of the State Board of Health, advises your committee that no recent advances in sanitary laws, organization and practices can be reported from Wyoming. Circular No. 11, dated February

1, 1916, defines the rules to be observed concerning tuberculosis. The disease is declared to be communicable and is surrounded with certain restrictions and the actions of all persons afflicted are regulated.

Possibly Wyoming is deemed so disgustingly healthy that the legislators of the State believe modern legislative measures unnecessary.

Jno. L. Burkart,
Chairman.
A. J. Chesley,
Committee.

Dr. John L. Burkart, Michigan: On October 1, 1915, we began, in Michigan, a tuberculosis survey of the State, under the privisions of Act 238, 1915, whereby the State Board of Health was given $50,000 a year for two years beginning July 1, 1917. Up to the present time fifteen counties have been covered in the following manner: Three weeks is given to each county. During the first week two visiting nurses call on the health officer and local physicians, secure from the former the names of all tubercular persons on record, visit the homes and advise all exposed persons to come to the public clinic which will be held the next week. The local physician is asked to coöperate, and from him we secure information concerning any suspected cases. The second week, medical men, selected by the board because they have had special training and experience in tuberculosis work, go to the several villages and cities in the county and examine all persons who present themselves for examination at the public clinic. We have a staff of about fifteen men called "medical experts," whom we pay $15.00 to $25.00 per day and expenses when on duty. The third week is devoted to educational work, lectures are delivered in schools, colleges, to civic bodies, etc.

The necessity for employing a visiting nurse and competent health officers is impressed upon the people. Under present laws, every county in Michigan *may* establish a county hospital for the care of tubercular patients. Ample provision for maintenance is made, but very few counties have availed themselves of the privilege.

Six thousand and eighteen persons have been examined; 1,534 positive cases heretofore unrecognized have been added to our records.

Considerable difficulty arose when we began this work because a statutory provision prohibited the exposure of the tuberculosis

records of the State to any person other than members of the board. We finally surmounted the obstacle and the work now progresses. What the ultimate end will be no one can predict. If we incite proper interest, the people may insist that proper health supervision legislation be enacted.

DR. H. M. BRACKEN, Minnesota: I wish to speak most highly of this report. At the same time I wish to call your attention to the fact that the United States Public Health Service is constantly receiving information relative to new laws. I do not know whether it is the wish of the Conference to go into competition with the United States Public Health Service in the making of reports of this kind.

DR. W. A. SAWYER, California: It would help us in our public health work if we gave more careful attention to our mailing lists with respect to exchanges with health departments and the United States Public Health Service. I have heard in the paper under discussion that Dr. Rankin's department, the State Board of Health of North Carolina, gives possibly the best press service. I think it would benefit us to get his press bulletins, and in turn we would be glad to put his department on our mailing list. I think such exchanges would raise the general standard of publicity work. I think, too, that if each of us would keep a book and make a record of the number of clippings received from each news letter, it would improve our press service by showing the relative success of the different items. I would suggest that all of us who are sending out news bulletins put on our mailing lists the secretary of every State board of health and also the United States Public Health Service.

DR. T. D. TUTTLE, Washington: It seems to me possible that some of us misunderstood what was wanted for this report. I thought the letter asked for the changes in the laws, but I notice that the report shows what some States are doing in the way of sending out bulletins, etc.

DR. E. G. WILLIAMS, Virginia: I also understood that only new laws were wanted by the committee. I may say that among the new features in health work in Virginia is the establishment of a tuberculosis sanatorium for colored people, which was authorized by the last Legislature.

Among the new practices is the placarding of the highways with health mottoes. We noticed that the placards advertising patent medicines, liver pills, cigarettes, etc., stay on the highways for years and are not torn down, so we thought that we would adopt the suggestion and put up health mottoes. They seem to take very well with the people. I had a member of the Legislature come to me and say that he wanted to introduce a law making it a penalty to tear them down. I urged him not to do it, as some one would tack on an amendment that permission would have to be gotten to put them on private property. Instead of printing on the placards "Posted by order of the State Board of Health—Do not remove," we have "Do not remove or deface—this may save someone's life."

Dr. A. J. Chesley, Minnesota: As a member of this committee I want to thank the chairman for doing all the work, and to suggest that this committee be continued, but that its field be restricted to recent advances in sanitary practices, the new laws being well covered in the bulletins and reports of the Public Health Service.

Upon motion, the report of this committee was accepted and the committee continued, with the provision that its report cover only recent advances in sanitary practice.

REPORT OF COMMITTEE ON POSTAL AID TO STATE HEALTH WORK

Dr. John S. Fulton, Maryland

The difficulty for which this committee is trying to find a remedy is the difficulty of supplying postage for a large number of outlying correspondents of boards of health. Among others, physicians are required to report communicable diseases. The matter has been discussed pretty thoroughly at several previous meetings and at the last meeting the attention of the Conference was called to the regulations of the postal department, by which large amounts of mail may be wrapped and sent without postage stamps affixed, under a permit. It would seem possible to find an analogous procedure, but moving in the other direction, when it is desirable to supply correspondents with envelopes without postage on them, but which would be accepted and paid for at the incoming office. About ten years ago an effort was made by this Conference to see if some such thing could not be done. Dr. Hurty and I went this morning to the postoffice to investigate this matter, but we find

that that sort of mail matter is issued in very large amounts indeed. What we represent, all the boards of health in the United States, would not be a patch to the pressure the postoffice department is under to provide that sort of thing.

My persistence in coming back to this subject arises from these circumstances: The Health Department of the City of Baltimore has for many years been sending out self-addressed envelopes to the physicians and midwives of Baltimore. The City Health Department maintains a deposit and whenever anyone has one of these envelopes he simply puts it in the box and the postage is paid upon the delivery of the mail at the city health office.

Now, it seems that some similar arrangement might be made for handling our incoming mail. I remember that the State of Pennsylvania was interested last year in this subject. All of our correspondents know that they can send in their monthly returns of births and deaths by affixing a two cent stamp to the envelope and dropping it in the mail. At the postoffice at Baltimore each piece is separately weighed, postage due stamps affixed, and a record made in a book, and the carrier collects the fees. This is an expensive way of attaining the results that they want.

I learned, for instance, that the Standard Oil Company pays very heavily for this practice. Their correspondents send off their mail with one unit of postage on it and the balance is paid with postage due stamps at the place of delivery. I imagine that trouble must be larger for that one corporation than for all of us together. In spite of pressure from such concerns as that, the Postoffice Department says that such a scheme is absolutely impossible at the present time. They say it would mean the opening of several thousand charge accounts in the city of New York alone, and mean an increase in salaries of some hundreds of thousands of dollars a year. So the gist of the matter is this, they recognize that it is a problem to be solved at some time, but they have no idea how they are to do it. They probably will not be able to do it in this generation. I, therefore, move that the committee be discontinued for ten years.

The report of the committee was accepted and the committee discontinued.

FUNDAMENTAL DISTINCTIONS BETWEEN STATE AND LOCAL, COUNTY AND CITY HEALTH OFFICERS

DR. J. N. HURTY, Indiana

The topic as stated, assumes or suggests that distinctions between state and local health policies, and county and city health policies must exist. I confess that such distinctions do not stand forth clearly in my mind. Certainly they do not pursue me. The object aimed at by any health policy, namely, the betterment of the public

health with the accompanying blessings, is always the same. The best policy in all instances, circumstances and conditions is honesty. That is to say, proceed uprightly with intelligence and knowledge, be open, frank, honest and just. The gum shoe sneaking policy of the so-called politician won't cut ice in public health work.

Of course, this generalization is all right, and now for something specific. A state health policy considers the whole state and a local health policy considers only the locality. The state policy takes in all facts and relationships for the whole field.

Many contend it would be the best policy for the state health authority to be one man, of course serving all time, under the title of state health commissioner, or state commissioner of health. He should have no health authority over him, unless perhaps an advisory board; and it goes without saying he should be a man fully equipped in every way for the position. This policy would demand that local health officers should be distinct and not subject to the control of a local board, and as in the first instance, be fully equipped in every way and be all-time, and of course local officers should be subordinate to the state health commissioner.

It should be the policy of the state to secure a general law which is intelligently comprehensive of all public health needs. This law should be a kindly beacon reflecting the warmth and light of hygiene. Or, if you please, a sign-board pointing the way; and this too should be the general policy of the central authority appointed to execute the law. The penalties should not be severe, but, certainly, should be sufficiently heavy to cause respect.

A health law is largely a benevolence. To be sure it regards human rights and protection of the weak, but as said, it is practically a benevolence, a kindly light. The spirit of hygiene is to show the way, not to force one to walk that way.

I would say the state health policy which is well founded will be characterized by knowledge, intelligence, kindliness, patience and firmness. It must stand upon the love of God and man, and have naught to do with selfishness and worship of money.

Education and persuasion, and an appeal to self interest, are the major forces which a wise state health policy will employ. Full, accurate records are essential to the successful application of any policy.

County and City Health Policies involve the same principles and ends already presented, and in addition local adaptation and greater detail. The local health officer can in great degree have personal acquaintance with his people, and should exert himself to acquire this quality. He can and should have very complete knowledge and understanding of the topography and of sanitary and insanitary conditions in his jurisdiction. He should study and understand the character, general intelligence and human quality of his people, and should give special attention to meeting and securing the co-

operation of certain active and influential individuals. His personality must be acceptable. He must not be a politician of the kind we generally think of when this word is mentioned, but he cannot ignore politics, or rather, partyism. He must belong to a party and must avoid partisanism. He must stand for men. It is his labor to help make and preserve mankind. A health officer who is not a gentleman will not represent the profession and will fail.

Local nuisances inimical to health should be abated by local officers. It is poor policy for the state or central health authority to take a hand in such work except to advise or urge that the same be done.

It should be the policy of state health authorities to foster a general and a specific initiative through or by which local initiative would be activated. And this implies that a local health policy should entertain responsiveness to any impulse leading to better work.

To awaken a health consciousness among the people is the first step in any public health policy, whether state or local. A health consciousness must, if it is to be of much value, be—if the paradox is permitted—very largely unconscious. In other words, the entire public, all the people, should be made so thoroughly conscious of public health needs as to cause a matter-of-course or unconscious acquiescence and action. Full knowledge and understanding with tact and a teaching ability can bring this condition about. Strong characters are needed in public health work for the execution and successful finish of any policy. Strong characters are not assertive and boastful. They are rather those possessed by persons who are so sure of themselves that they never feel in the slightest degree tempted to call attention to themselves. If they do their work well, they are more than content to allow the work to speak for itself. And this being interpreted means, no health policy, state or local, wise or not very wise, can be carried out by any other than a gentleman.

SUMMARY.

It is the health policy of the state to supply a wise health law or laws, under which an organization is possible which coördinates all health activities. Such must enlighten, lead, direct and enthuse.

Patience inexhaustible should be the pivot upon which it revolves. In its right hand it should carry gentle peace. It must not be irksome or oppressive, but instead pleasant, agreeable and acceptable. Its detail must be consistent.

County and city health policies should include the general principals just set forth, perhaps to a greater degree, for county and city health authorities come in closer contact with the people. A state policy contemplates principally contact with officers and local authorities, meeting the people generally through the local officers.

Force, while it must be used at times, must not be the first appeal. Quietness and confidence constitute the strength of all health policies.

Dr. S. L. Jepson, West Virginia: I like the tone of the paper very much. The doctor has the correct idea in saying that we must execute the law in a pleasant way so far as possible. There are two ways of doing things, a pleasant way and an unpleasant way, and the man who does things in an unpleasant way greatly interferes with his usefulness. I have in mind an exceedingly efficient man, but he does not know how to do anything pleasantly. Fifty-five out of seventy-five physicians in the city of which he was health officer petitioned the council against his reappointment. I have found occasion to call down some of my subordinates who are doing things a little radically. Such methods do not accomplish any good. People can be persuaded very often when they cannot be driven. One can be firm without being offensive in methods of enforcing his orders.

Dr. W. S. Leathers, Mississippi: I think that the question to which Dr. Hurty called our attention is one of considerable importance. This paper is excellent in the principles which it advocates, but I feel that Dr. Hurty perhaps does not emphasize sufficiently the point that it is possible to execute the law along State Health lines in an agreeable way. In other words, there is such a thing as the Health Officer enforcing the law and keeping his head. If the person who violates the health regulations becomes ill-tempered, that is another matter. I wish to emphasize the necessity of using not infrequently the law or the courts in the enforcement of sanitary ordinances. It is not sufficient, in my experience, or, I should rather say, one cannot expect frequently the best results by kindly persuasive methods. I think we must deal clearly and candidly with the public and let them understand that after having been notified what they should do, in the event the law is still disobeyed, prosecution is the only recourse. This has been our plan in Mississippi. We have had at least 3,000 cases in court during the past three and a half or four years, and, almost without exception, a fine has been imposed. Instead of this procedure making the work unpopular it has actually strengthened the public health work

of the State. The Legislature approves of it, the people are behind it, and it is usually the relatively few who disobey the law that don't like it. I should state, in all fairness, that at the very outset we had more difficulty in getting results than at present. I agree with Dr. Hurty in the fundamental principle that we should deal kindly with the people in the health matters, but in conclusion I would wish to reiterate the point that we must use the law in many instances to get results.

DR. C. A. HARPER, Wisconsin: I want to say a word in regard to obtaining coöperation on the part of the citizens of the State. I believe that people mean well and are willing to coöperate, and that their failure to do so results largely from ignorance on their part of that which is required of them.

We have adopted in Wisconsin rather a simple procedure, which, primarily, might seem objectionable, and that is the licensing of people who run public places of various forms and character. The Legislature grants us power to license certain public vocations, giving us at the same time the right to make rules and regulations governing such lines of business. The license fee is usually very small, or there may be no fee; but this system of licensing gives a very powerful element of control. After the adoption of this system we find that the standard, as far as sanitary measures are concerned, rises rapidly. If a place fails to keep up to the standard a license can be refused the next year and the particular individual and his business is eliminated. In our State the food department is not under the direction of the State Board of Health, but we undoubtedly have had one of the best food commissioners in the Union. He placed the standard of food products on a high plane. We endeavored in years past to get him to license creameries and cheese factories. He was not in accord with our views, however, on the question, and therefore the system of licensing was not inaugurated. He believed strongly in the principle of prosecution when places under his control were not kept up to the required standard. While he obtained very excellent results, he also from repeated prosecutions established a very powerful opposition to himself, which was probably one of the main causes for his removal. His successor came into office and obtained from the Legislature permission to license creameries

and cheese factories. He is now busily engaged in getting out rules and regulations giving the minimum requirements in regard to the sanitary conditions controlling creameries and cheese factories. If these rules and regulations are reasonable and those coming under them are required to live up to the standard, undoubtedly a great advance will be made in the sanitary conditions of creameries and cheese factories, with a fewer number of prosecutions. Thereby I believe more hearty coöperation will be established.

We have a certain standard of requirements for maternity hospitals. We tell the managers that they have to come up to a certain standard or they will not receive a license. No fee is charged for the license, yet we have supervisory control of these institutions. We regulate them not only from the sanitary standpoint, but also as to the number of inmates they may accept at any one time. I firmly believe that we get much more from the licensing feature than by going out and repeatedly prosecuting, although at times a prosecution is absolutely essential. If you prosecute a man he is not likely to be your friend afterwards, and therefore you lose his coöperation. We have been appealed to by various business enterprises of the State as to methods of bringing their places up to the standard so that prosecution might be avoided, showing that in many instances it is lack of knowledge and not one of intent that causes insanitary conditions to exist.

With Dr. Hurty, I believe that in practically all instances, not in every one, but in practically all, kindliness, with positiveness and willingness to show the way, will bring you results when the courts will cause you eventually to fail.

Dr. W C. Woodward, District of Columbia: There is one interesting feature in connection with the plan suggested by Dr. Harper which I would like him to explain. We have had for many years the registration system, without fees or licenses, applying to grocery stores and other places where food is produced, distributed, or handled, to stables and to laundries, including all taking in washing for more than three families. I gathered from Dr. Harper's talk that his board has found some means whereby they can prevent a man from doing business without appealing to the courts, *i. e.*, if a man has a bad place

they can say "Close up," and he closes. I would like to learn the legal and administrative mechanism by which that is accomplished.

DR. HARPER: Every citizen has the right to appeal to the courts. The Board of Health has the power to make certain rules and regulations. When they license a place of business they can establish certain standards. If the place fails to come up to the standard, renewal of the license is refused. When we tell them to close, if they do not do it, we have to go to the courts.

DR. E. G. WILLIAMS, Virginia: I would like to mention a practice which we have recently instituted in waking up a community to health work, and that is the health revival. In one of our towns of about two thousand population, all the organizations united under the leadership of a Baptist minister to have a health revival. The revival lasted one week, beginning on Sunday night. There were two speakers for each night. The choirs furnished music. In the afternoon there was a parade of automobiles with banners flying urging everybody to attend the meetings. As a result of the health revival during that week, the city council and board of supervisors appropriated enough money for a whole-time health officer for the town and county. The people are demanding that the community be made sanitary. While the health officer was employed for a period of only three months, the town will probably continue his term of office. The county also will help to pay him.

DR. J. N. HURTY, Indiana: I should like to call your attention to the fact that in the President's remarks he has shown us how he gently and kindly led the people to do a thing for their own interests. I know you must apply the whip once in a while, but you should do it kindly and with a smile, never in anger. Some time ago I received a letter from the statistical department, saying that we must prosecute every doctor who failed to report promptly. One could not do that. We should not prosecute wholesale, right and left, but where there is an obstreperous doctor we take the whip to him good and hard. Our attorney-general said it was an asinine proposition to prosecute every doctor who did not report on time, and that power was given

the courts to extend clemency and mercy, and that if we tried to enforce a law on any other basis we would certainly fail.

Dr. ———: While Dr. Hurty was speaking something popped into my own mind as to the attitude of a certain city when it seemed necessary to use the big club. The whole trick turned on taking advantage of the attitude of the judicial mind. Most judges are sticklers on maintaining what is known as judicial dignity. Now, when the health department of that city found a physician who was negligent and did not report, as a rule they called him up by telephone. They watched him, and the next time they got evidence they sent him a letter. Sometimes they tried a third time. After that they went down to the judge of the municipal court and got some kind of a legal document summoning the physician to come not into court but before the board of health to discuss the question with them. Some of them were foolish enough not to pay any attention to that, and they got themselves into court for contempt.

EXTENT AND METHOD OF STATE CONTROL OVER COUNTY HEALTH WORK

Dr. W. S. Rankin, Secretary, North Carolina State Board of Health

The extent of state control over county health work in any state will depend upon the intensity of the democratic spirit in government. In a state where the people, relatively speaking, are too unconcerned with the exercise of local self-government, the central or state government may exercise a control in sanitary administration over the county or local government that amounts practically to direction. On the other hand, in a state where the people are sensitive to the rights of their local government, where the people insist on being allowed to govern themselves in the fullest sense of the term, the state government is allowed to exercise but slight control in sanitary matters over the county government. Without entering into a discussion of those factors responsible for state tendencies to centralize or de-centralize government, we may say here that there seems to be a considerable variation in the willingness of the people of the different states to yield their democratic rights to the state government.

Certainly wherever the state can direct county health work, it is better in the development of that work, if not in its continuance, for the state to exercise such direction. This is so for two reasons. First, the stronger state government, with its more adequately manned and equipped department, can ascertain the plans of county health work as adopted and followed by other counties of the state

and by the counties of other states, and so the state government is in a far better position than any county to formulate a plan of county health work. Second, the state government, in touch with the health work of a number of counties, can create standards, properly value the work in the various counties by comparison, and thereby set a premium and an ideal before the more ambitions county health departments. There can be no question that in a state where central control would be permitted, there will be a much more rapidly developed, efficient county health government than in a state where the sentiment for local self-government will not permit such centralization. However, this statement will apply to all phases of government, and if one commits himself to this principle, even in a circumscribed field of operation, he becomes inconsistent in not advocating the larger and more fundamental principle of monarchial government over a democracy, for a good monarchial government will get bigger and quicker results than a democracy. We may very properly raise the question as to whether the results gotten are better than the principle sacrificed. Life, it is true, is valuable, but so is that experience that leads to a knowledge of self-control. Lives swapped for knowledge may not be, in the long run, a bad trade.

If a state can and will direct the sanitary work of the local government, there are several ways in which this may be done in sugar-coated form; that is, disguised as much as possible to prevent offending local public sentiment: First, the state board of health may appoint such a number of the local board of health as to give the state control of the local board in its selection of a health officer and in its formulation of rules by which the health officer is to work. Second, the state board of health may nominate a limited number of duly qualified health officers to the local board of health from which the local board selects their local health officer. The people in my state are thoroughly democratic in spirit, are insistent upon their right to local self-government, and I confess that I am in agreement with them on the general principle that it is better to sacrifice quick returns in sanitary administration than to sacrifice the most fundamental principle of democracy.

I believe, however, that there are methods of state direction in local health work that are not in any way incompatible with the principles of local self-government. There are now in sight two methods by which this centralized direction can be brought to bear on county health work in such a way as not to trample upon or interfere with the principle of local self-government.

The first method is the creation of a standard or model plan of county health work, endorsed by the United States Health Service, the state governments of a number of the states, and last but not least, by this Conference. Such a model plan of county health work made familiar to the people of a state through the bulletins and newspapers would of necessity have to be adopted and followed

by the majority of the counties. Such a model plan would carry its checks and balances, or else it could not be a model. Those county health officers who could carry out this model plan, that is, the properly prepared county health officers, would be only too glad to adopt the plan, because then, in the face of any local criticism, the health officer would know that he could call to his support both his state board of health and the influence and backing, if necessary, of the Public Health Service. I am glad to say that the Public Health Service is undertaking, with the State Board of Health of North Carolina, to work out in a North Carolina county a model plan of county health work suitable to the average county. It is my understanding that coincident with this piece of administrative research work carried out in North Carolina, several similar pieces of county health work will be undertaken in other sections of the Union. A model plan of county health work for the whole time county health officer is one of the greatest needs of the time. Whole time county health officer work is in its formative stage. At present it is plastic. Let five or six or seven or eight or ten years pass, and it will be infinitely harder to standardize and direct this important work.

The second method of directing local health work, and at the same time respecting the principle of local self-government, is what may be described as the Unit System of County Health Work. The fundamental principles of the Unit System of County Health Work are: (1) A division of the total county health problem into separate, independent, and smaller units or health problems. (2) The state's entering into a contract with the county to handle one, two, three, or more, of the separate problems for definite amounts to be paid by the county to the state.

Illustration: The typhoid problem of a county is independent of its tuberculosis problem, its contagious disease problem, its medical inspection of schools problem, its periodic medical examination problem, its malarial problem, and many other local health problems. One of the most effective and economical ways of attacking the typhoid problem of a county is to vaccinate a large number of the county people against typhoid fever. The vaccination protects those that have been vaccinated and it educates others to resort to vaccination later when typhoid fever occurs in their neighborhood; moreover, in the typhoid vaccination county campaign, a great deal of educational work against typhoid fever is carried on. Without entering into a description of the details of the plan except to say that I should be glad to give these details to anyone interested, I will state that we carried out this plan of work in twelve North Carolina counties last summer. The average population of these counties was about 25,000. We vaccinated an average of 4,300 people per county at a cost to the county of somewhere between $500 and $600. Through our experience of last summer, we are now carrying on similar campaigns in the counties of our state

this year for $400 a county. We spend an average of five weeks in the county. We put a doctor in the county, paying him $200 a month and requiring him to own a machine. He has as his assistant a young person that he pays from $1.00 to $1.50 a day. This person keeps his records, the names of those vaccinated, and occasionally assists him in sterilizing the arms. The doctor meets the people of a county at from 12 to 15 different points, the time and place of meetings being thoroughly advertised in the county papers and on placards posted throughout the county. The doctor goes to each point four times, once every week, thereby giving the people of the county two chances to get a complete vaccination.

Another unit that we have carried out already in three counties is a unit that couples medical inspection of schools with popular sanitary instruction. For this piece of work the county pays direct to the State Board of Health $10 for every school day, or $50 for each week used in completing the unit. We pay this money to our own agent, that is $150 per month, and allow him $50 a month for his expenses, requiring him at the same time to own and operate an automobile. A description of what takes place at each school in the county will give you a concise idea of the unit as a whole. The medical inspector reaches the school at 10 o'clock in the morning on a day that the teacher has had at least a month to prepare for, and on a day that has been advertised two weeks in advance through placards distributed by the school children throughout the school community. The inspector begins his work with a short ten-minute talk to the school on the importance of knowing the laws of health, of self-preservation. He then examines those children that have been previously selected by the teacher according to the watch-whisper, Snellen Test Card tests, and indications of adenoids, for the common defects of school children. Confirming the teacher's suspicions, he gives the child a notification card to its parents and files the name of the child and its parents in the State Board of Health office, through which filing the board, by correspondence, can keep in touch with the parents with the hope of influencing the parents to have the child treated. After examining the children, the doctor quizzes the entire school on a catechism on disease prevention which has been furnished and taught the children the month previous to the inspector's visit. After this quiz, which lasts from an hour to an hour and a half, a conference on any phase of the disease problem with the parents who are present is held. In the evening at 8 o'clock, the inspector gives several ten to twelve minute lantern talks on the more important preventable diseases. Between the lantern lectures the children read compositions or essays on hygenic and sanitary subjects which their parents have been encouraged to help them write. This program is repeated in every school in the county. If there are 80 schools in the county, it will require 80 days or 18 weeks or 4½ months to com-

plete this unit of work. A prize is given for the best essay, and a prize is offered to the school in the county that gives us the best coöperation in preparing for School Health Day.

There are other units in process of development. The Federal Children's Bureau is now at work in one of our counties endeavoring to work out a county unit on infant hygiene. We hope to begin this fall the most important unit which we have in mind, namely, a unit of work directed to finding the common diseases incidental to the period of life between 30 and 60 in their incipiency and of advising the people, publicly and individually in regard to the importance of being on their guard against this class of diseases and of detecting them when treatment can be made effective. For over a year, the first year of our unit work, we have used three men in our department that the counties and not the State paid for. We believe in five years we can increase this force to twenty men.

In conclusion, the beauty of the unit system is that it works with a thoroughly definite plan, the county pays for it, and thereby supplements the state appropriation for public health work, and the state has absolute direction of the local work.

THE PREVENTION OF SYPHILIS

Allan J. McLaughlin
Surgeon, U. S. Public Health Service, Commissioner of Health, Commonwealth of Massachusetts

In surveying his field of work the health officer must consider carefully the relative weight of the factors which make up his problem. He must consider not only their relative importance as gauged by the number of deaths caused but also the feasibility of elimination or reduction. He must consider carefully the economic loss occasioned by each factor and the possibilities of life saving,, disease prevention and economic saving measured in terms of dollars and cents.

The big factors in the death rate of Massachusetts differ little from those of other states. There were over 50,000 deaths in Massachusetts in 1914. About 70 per cent of these, or more than 35,000 were due to the following causes:

Infant mortality	9,894
Pneumonia	5,987
Organic heart disease	5,428
Tuberculosis	5,061
Cancer	3,586
Bright's disease	3,057
Apoplexy	2,606
Syphilis	?
Diphtheria	652

Typhoid	268
Scarlet fever	246
Whooping cough	225
Measles	149
Influenza	129

Syphilis is marked with an interrogation point as it is impossible to say definitely how many deaths are due to this disease.

Syphilis as a public health problem has received careful consideration from the state department of health during the past year. This subject has been neglected in the past, although as a problem of preventable contagious disease, and in opportunity for life saving, prevention of blindness, insanity and pauperism, it is second only to tuberculosis.

Syphilis is a preventable disease. We have exact knowledge of its cause, its modes of transmission, its prevention and its cure, yet we are not able to say that it is being reduced.

What is its relative importance as a public health problem? It is responsible for more deaths than diphtheria, typhoid fever, scarlet fever, measles, whooping cough and influenza combined, and it is probably responsible for from two thousand to three thousand deaths each year in Massachusetts. Syphilis seldom appears on a death certificate, but hidden away under a dozen technical titles are thousands of deaths really due to syphilis.

The economic loss due to syphilis is appalling. It increases enormously our expenses for the blind, pauper and insane. In Massachusetts one-fourth of the entire expenses of the state government are incurred in the care of its insane. That is, of an amount something over $18,000,000, $4,500,000 is expended in equipping and maintaining the institutions under the state board of insanity. At least 10 per cent of insanity is due to syphilis—a preventable and curable disease—so that the state of Massachusetts expends at least $450,000 annually for syphilitic insane. Under these circumstances it would seem sound business policy for the state to expend some money in the prevention of syphilis.

In attacking syphilis as a public health problem two direct weapons are available:

1. Free Wassermann laboratory tests.
2. Free specific treatment.

The Massachusetts State Department of Health established its Wassermann Laboratory in June, 1915, and we are now examining free over 2,000 specimens of blood per month. The following table shows how the work has grown from month to month:

Month	Number of Specimens Tested.
June	631
July	986

August	1,036
September	1,126
October	1,511
November	1,201
December	1,818
January	2,800
February	2,043
March	2,586
April	2,248

Furnishing facilities for accurate diagnosis free of charge uncovers for treatment thousands of cases, many of which would not be treated for syphilis, and stimulates an enormous demand for specific treatment. The majority of these cases are poor or moderately well-to-do people.

The price of salvarsan before the war was prohibitive and since the war it has been almost impossible to obtain it at any price. I believe that whenever a physician reports the data of a case of syphilis, omitting the name and address, and submits a specimen of blood which is found positive in our laboratory, the state should send him the salvarsan free with which to treat the case. The number of other distinguishing marks sent in by the physician in lieu of the name of the patient should be replaced by a serial number given by the state department of health and the physician then requested to make future reports or references under the serial number.

Some of our larger hospitals and dispensaries are doing splendid work in destroying the infection in the carriers of syphilis. Many other hospitals and dispensaries should pursue a more liberal policy. These other hospitals now refuse to admit syphilis in the early stages, although they admit aortitis, aneurism, locomotor ataxia, and other diseases which are really syphilis in a later stage. As a compensation salvarsan should be furnished free to hospitals and dispensaries. The time to eradicate the infection of syphilis is in the early stage. The general public must be educated in the appalling results of neglected syphilis, and dispensaries, hospitals and private physicians encouraged and assisted in treating the early cases, without allowing them to become cases of locomotor ataxia, general paralysis, heart disease or apoplexy.

Certain arguments have been advanced against treating syphilis as a public health problem. It is said that to advertise the marvelous effect of salvarsan, and to place it within reach of the poor is to put a premium upon vice and to absolve the syphilitic from the just punishment of his sins. As health officers let us be practical and consider syphilis as a public health problem, leaving the academic discussion of its moral and social aspects to others. We may relieve the unfortunate sufferer from the punishment of his own misdeeds but we are also preventing this punishment from falling upon women,

children, and other innocent victims. Thousands of cases are acquired innocently from syphilitics and our plain duty is to prevent these infections by eliminating the carriers of the disease without regard to their social or moral status.

Thousands of prisoners and inmates of federal, State, and municipal institutions are discharged each year and these are turned loose without much regard to their being carriers of disease. In Massachusetts, I believe that every inmate of a public institution should be tested for syphilis and not discharged from that institution until he or she has been properly treated and shown to be no longer capable of infecting others.

As a sanitarian and practitioner of preventive medicine, I desire to accentuate especially the necessity of early treatment in syphilis. The cardinal principle of our preventive campaign must be proper treatment in the early stages. In the first and second stages of syphilis the spirochætæ are more easily reached and destroyed by salvarsan; hence the chances of complete cure are vastly better than where treatment is delayed. The important point in early treatment from the health officers' point of view is that the infection is destroyed and open sores and lesions which are practically certain to cause other cases are prevented.

The prohibitive price of salvarsan and the difficulty of obtaining sufficient amounts at any price constituted a problem which it seemed to me the commonwealth should solve, if we expect to do our full duty in preventing syphilis. If salvarsan can be made by our expert chemists, it seems to me that the commonwealth of Massachusetts would be within its rights in making this substance for free distribution to residents of Massachusetts in view of the facts that the price is prohibitive and the supply inadequate. It is reasonable to expect that United States patents are not intended to deprive the people of any State of a substance essential to its health and well being, and if we are restricted to procuring salvarsan from Germany under existing conditions this amounts to deprivation. Accordingly I recommended the following resolution, which was passed by the Legislature and signed by the Governor on April 11, 1916, thereby becoming law:

RESOLUTION AUTHORIZING THE STATE DEPARTMENT OF HEALTH TO PROVIDE FOR THE PREVENTION AND SUPPRESSION OF SYPHILIS.

Resolved, That there be allowed and paid out of the treasury of the commonwealth a sum not exceeding ten thousand dollars, to be expended under the direction of the state department of health in purchasing dioxy-diamino-arsenobenzol and its derivatives, or other substances of equal or greater value in the prevention or the transmission of syphilis, or in making investigations as to the practicability of manufacturing, or in manufacturing, the same for free distribution to boards of health, hospitals, dispensaries and physi-

cians for use within the commonwealth in the suppression of syphilis in such manner and subject to such rules and regulations as the state department of health shall prescribe.

Our chemists are now experimenting and making substances, the effects of which will be equal to salvarsan, and possibly better. We expect by autumn to be able to produce in large quantities such substances for free distribution in Massachusetts.

What does this mean? It means that thousands of cases, many of them in the early stage of syphilis, who are neglected or untreated, will receive treatment, the minimum result of which makes the patient non-infective, thus preventing thousands of new infections, and the maximum result of which will be to eliminate locomotor ataxia, general paresis and the other late manifestations of the disease which clog our institutions for the blind, the insane, and the pauper.

MINIMUM PERIOD OF QUARANTINE AND DEGREE OF ISOLATION IN MEASLES, WHOOPING COUGH, DIPHTHERIA, SCARLET FEVER, SMALLPOX AND MUMPS

Chas. F. Dalton, M. D.
Secretary, Vermont State Board of Health

In attempting to arrive at some conclusions in regard to this subject, the question is at once presented, "What is quarantine?" If one tries to find out by studying the State laws and regulations, he is sure to become confused in the maze of conflicting opinions. While all agree on the main points, there are many details about which each one seems to have his own ideas. Many States give more or less definite instructions as to what may or may not be done during a period of quarantine, but, even so, there is usually a sort of haze surrounding the explanation, so that a clear-cut line is hard to establish.

Of course, we all know that the reason for this lack of definition of terms is our own dense ignorance of the diseases themselves, and the modes of transmission. But that the States are ready to adopt scientific methods is amply shown by the fact that every one having laboratory facilities terminates its quarantine for diphtheria by bacteriological cultures, while in scarlet fever a pitiful attempt is made to set some time when the patient is supposed to be free from infection.

Unfortunately, there have been no new facts brought to light since our meeting a year ago, and we must continue to do the best we can with the knowledge we have. There is, however, a growing conviction that infection is carried, with few exceptions, by fresh human excretions, and while very few of the State regulations show the

change, there is a decided tendency to disregard the inanimate objects and exercise more control over the sick patient and the exposed or healthy carrier. In fact, our problem *is* the control of the human element in the various diseases. Until we are given definite and approved information in regard to the causative agent and means of transmission of all the communicable diseases, we can do no better than to recognize the apparent facts and shape our course accordingly. I shall not attempt to define quarantine nor any of its modifications, but rather try to show some of the facts which bear on the general subject and endeavor to find the concensus of opinion on those questions on which we are more or less in agreement.

One fact which stands out perhaps more prominently than all others is the importance of the healthy carrier as a means of spreading diseases. Every health officer, sooner or later, is forced to deal with the carrier problem, and I believe it will not be many years before we shape our regulations in accordance with the increasing knowledge we are gaining on this subject. We have for years recognized the presence of typhoid carriers, but it is much more recently that we have talked even of diphtheria carriers, and, while we cannot demonstrate by bacteriological methods the existence of "scarlet fever carriers" and "measles carriers," the epidemiological evidence is all in favor of such a conclusion.

Another problem which renders control of quarantine increasingly difficult is the very mild form in which the eruptive diseases appear, resulting in either complete failure of recognition or disagreement as to diagnosis. When scarlet fever is called German measles until some susceptible child comes down with a characteristic attack and makes the diagnosis plain, one feels that public health might best be conserved by insisting on a rigid quarantine for every communicable disease, no matter how mild, at least until a diagnosis is definitely made.

A third point which must be given great weight in quarantine regulations is the well-known fact that the preëruptive stage or the pre-typical stage is the time when the organisms are the most active and most easily spread. So important is this matter that the subject under consideration might well be made—not, how long to maintain quarantine, but how soon to institute quarantine. The early stage is surely the crucial point in the whole subject. A recent writer reaches the conclusion that the attempt to control measles and whooping cough is useless because the damage is done before quarantine is established. I have seen many a discouraged health officer throw up his hands with the same pessimistic wail, but it would never do for a State Department of Health to give up the battle so easily. If we fail to control measles, per se, let us work for more rigid inspection of school children and isolate every child which shows a coryza or cough. The problem, of course, presents

difficulties, but the mortality rate of an epidemic of measles or whooping cough, if conscientiously recorded, shows it to be a fight worthy of the attention of the greatest among us.

For the purpose of summarizing the systems of quarantine in the various States, I requested of each State a copy of the laws and regulations on this subject. Forty-one replies were received. While the following is, in no respect, a complete study, it may serve to give some idea of the methods used, and as a beginning to what I hope may be a model scheme for controlling the diseases under consideration.

MEASLES.

In regard to the minimum period of quarantine for measles, there seems to be a majority opinion that 14 days after the first symptoms is the proper time for releasing the patient. Twenty-six States set a time for terminating the quarantine. Of these, 15 give 14 days; 1, 21 days; 1, 16 days; 1, 12 days; 4, 10 days; 3, 7 days; 1, 5 days. Fourteen of these make the release dependent upon freedom from catarrhal symptoms or desquamation, or both, so that the time of quarantine may be much extended or lessened. It is also noticeable that those which set the smaller number of days, specify "after eruption," thus lengthening the period of isolation by 3 or 4 days. Five States release on disappearance of symptoms without mentioning a number of days. Five appear to have no ruling on the subject.

As a matter of fact, practically every State which pretends to supervise a measles patient evidently intends to give release when the case becomes non-infective and in the end, most of the regulations amount to the same thing, if the different wording is taken into account. That time is apparently believed to be when the catarrhal or inflammatory symptoms have disappeared. Some of the statements should be clarified and, in the light of our present knowledge, the mention of desquamation or peeling may well be omitted.

In measles, as well as in probably all the diseases mentioned in this subject, we now know that the free exchange of fresh buccal and nasal secretion is responsible for the spread of the disease. Consequently, if we can determine by some means when these secretions become non-infective, the problem of length of quarantine is solved. Unfortunately, that time is not yet, but we may have hope that almost any time the information may be given. Until then, I see no reason for attempting to set any but an approximate length of quarantine as to the number of days, but there is every reason, according to our present knowledge, to hold the patient until the throat and nose are entirely clear from catarrhal discharge. Undoubtedly, setting a minimum period of 14 days is a wholesome lesson for the laity, but always to this should be added the provision as to freedom from symptoms.

The degree of isolation in measles is a matter on which opinions seem to differ very materially. So far as my replies indicate, 28 States have some form of quarantine for this disease. Seven of these only put up a warning placard, and none seem to require a quarantine as rigid as that for scarlet fever, although one State (Idaho) specifically provides that such a quarantine may be established if considered necessary by the health authorities. This latter appears to be a wise provision for the control of obstreperous cases.

Studies already made on the specific virus of measles indicate that the contagion is short-lived after leaving the human host and, unless a non-immune obtains the fresh secretions from an infective patient, there is slight danger. This has led to a letting down of restrictions on other members of the family, and culminated in the isolation of the patient, and such non-immunes as may have been exposed. One only needs to review the history of epidemics of measles to know that quarantine as at present practiced does not exert any decided influence on the occurrence of new cases. Obviously, there is an unguarded avenue somewhere which affords free means of communication and infection. That avenue is undoubtedly furnished by failure to isolate the patient in the preeruptive stage. Are there any means of guarding it? One is almost obliged to say "no" under our present methods, but as previously indicated, I believe this difficulty can be at least partially overcome by the adoption of inspection of school children and isolation of those who show the first signs of catarrhal symptoms. When the child is really down sick, there is little trouble with the isolation. If isolation could be arranged at the very beginning of the acute symptoms, we could close the gates of infection to a marked degree. This is a problem for every one to work out according to his opportunity, and possibly the public at large is not ready for such decisive measures. It is, however, a thing to strive for, and every health officer desires the nearest possible approach to the ideal. Moreover, the movement is already begun, for 24 State correspondents indicate restrictions for contacts—usually isolation during the period of inoculation. A few States have forbidden public funerals in cases of death from measles, one (New York) explaining that the regulation is made to restrict those who may be coming down with the disease.

WHOOPING COUGH.

Much the same conditions exist in regard to whooping cough as have been already described in the discussion of measles. The attempt to set a time as a minimum period of quarantine is made by 21 States. Of these 5 specify 8 weeks; 7, 6 weeks; 4, 5 weeks; 1, 25 days; 1, 21 days; 1, 2 weeks; 1, 15 days after the cough has ceased, and 1, 1 week after the cough; 5 give an option of a minimum

total period, or 1 to 2 weeks after the cough; 15 specify freedom from the cough or whoop, in addition to a minimum time. A few others do not attempt to set any actual number of days or weeks, but make use of such expressions as "in the judgment of the health officer"; "no longer capable of transmitting the disease"; "until recovery." It would appear at first thought that the ones who use such expressions are placing a large responsibility on their health officers, but if the subject is looked into more carefuly, it is evident that these make practically the same requirements as the others, except that there is no set time limit.

If we were dealing entirely with intelligent and trustworthy persons, the simple provision "until recovery" would be sufficient, assuming that the end point of recovery were plainly marked so that the ordinary health officer could discern it. The ordinary health officer, however, is a decidedly uncertain quantity; his judgment is not always to be so implicitly relied upon, and the people are often urgent. It, therefore, seems necessary to have written into the law or regulation a definite number of days, which item may be pointed out for the benefit of those who would place private convenience before public welfare.

Studies are being conducted in connection with this subject, and the time may not be far off when we shall be able to tell by culture or other test when the infectious stage is over. Without such a test, it is merely a matter of opinion or expediency as to the time limit given. Apparently, six weeks has the preference, with the provision for extension of time if the characteristic whoop or cough still remains, and a further provision in the interests of safety for exclusion from school for an additional week.

The degree of isolation here is a matter of many opinions. Of the States who make any pretense at control, 8 regard simple placarding sufficient. Others specify that the child must be excluded from school, or must not appear in any public place. It is generally considered sufficient to isolate the patient only, as the infection of this disease, like measles, is assumed to be of short duration. On account of the publicity given to the baneful effects of this disease, it is not unlikely that the more intelligent persons among the public will soon demand better protection against whooping cough than is now given in most States. While, of course, there would be complaint from the family under quarantine, I believe we should be supported in increasing the degree of isolation, so as to keep the child confined in a single room or apartment, or at the most to supervised premises, instead of compromising by yellow bands or placards only and the trusting to such warning to keep away other children, or even their elders. If the time ever comes when all deaths due to whooping cough are properly recorded and classified, there will be no further need of argument for more rigid supervision of patients.

DIPHTHERIA.

Diphtheria constitutes the one disease about which there is practical unanimity of opinion as to the period of quarantine. With only three exceptions on my list, the culture method is used for release, and the majority specify two consecutive negatives. A minimum time is mentioned by seventeen States, being nearly all two or three weeks. So long as it is understood that quarantine is terminated by cultures only, the placing of a time limit is harmless and may help to give an idea of the average number of days required. In view of the trouble caused by chronic carriers, cultures should be required from both throat and nose, and they should, of course, be consecutive negatives.

As there is a tendency to "stiffen up" on the quarantine of those diseases about which we know very little, so there is indication of a desire to be more lenient in regard to diphtheria when culture facilities are at hand. Even in those States where most strict isolation measures are required, contacts are released on negative culture. Six States demand immunizing doses of antitoxin before releasing contacts. This is both useless and expensive, since cultures will separate the harmless ones, and antitoxin, on the other hand, will *not* clear up the throats of carriers. Even the Schick test, as done in institutions, should be accompanied by cultures.

SCARLET FEVER.

Thirty-five States having quarantine regulations of one kind or another in regard to scarlet fever have sent their laws and regulations. In the matter of length of quarantine, 15 of these specify either 4 weeks or 30 days as a minimum period; 5 set 21 days; 3, 6 weeks; 2, 5 weeks; 1, 2 weeks; 1, 1 week after discharges have ceased; 1, 5 days after desquamation is complete. Seven set no time.

This disease seems to have provoked more regulations than any other and, by the same token, they are more varied. Obviously, there can be no agreement of opinion in regard to a disease about which we know practically nothing. The control of scarlet fever is a "free-for-all" race with all sorts and conditions entered. There is little use to speculate as to who is correct, for there is no way to finally decide. The case is not hopeless, however, for gradually we are getting at facts which will eventually be corrected to clear the whole situation. The matter of desquamation is a case in point. Ten States still mention desquamation in their regulations as bearing on the period of quarantine. Like mentioning the number of days, this may be convenient, as the completion of desquamation may be a fairly good index of the clearing up of the throat and nose, or any infectious discharges. Other than this we all probably agree that the peeling is not of much significance. If the researches of Mal-

lory and others result in any conclusions capable of scientific proof, we may some time be able to determine with some degree of accuracy when a scarlet fever patient has ceased to be a menace. But there are many difficulties in the way, and it is quite probable that for some time yet we shall grope about in the darkness. The only reasonable time for terminating the quarantine on scarlet fever is when, as one State says, the patient becomes "normal," or, as said by another State, when there is "no more danger" (Montana). Such a time, must of necessity, be variable, and is perhaps best expressed by specifying that "no catarrhal condition" remains in the throat and nose and no discharging cavity or sinus.

The preference in time, though not the majority, is approximately 30 days, and this may well be given until we know better.

As to the isolation in this disease, there is no doubt that the mouth and nose contain the virus and that the freshly sprayed secretion may carry the organism to clothing or other articles, whence, within a time at present unknown, it may be distributed to susceptible persons and cause disease. It is, therefore imperative that strict supervision should be exercised in this quarantine, and persons released from the affected house only after the exercise of all known precautions. This is pretty generally recognized—18 States specifying rigid, complete, absolute strict or full quarantine, and most of the others going as far as they can in the same direction.

SMALLPOX.

There is little need to discuss this disease as related to quarantine. Those who believe in restricting smallpox patients will continue to act on their belief, while those who think that the public should be vaccinated or take the consequences would probably not be convinced by discussion. Actually, I have a record of 31 States enforcing a quarantine for smallpox. Termination is quite generally determined by complete disappearance of the eruption, with periods of from 14 to 30 days given as minimum.

Quarantine is almost unanimously complete, and contacts are released on vaccination, or at the end of incubation period.

MUMPS.

Twenty-five of the States heard from mention mumps among communicable diseases, and of these, eleven do not place any quarantine on this disease. Some placard, but do not quarantine, others report but do not placard. Four specify that quarantine shall be maintained for one week after the swelling has disappeared; two set three weeks as the minimum time; two, two weeks; one, sixteen days, and four mention the absence of swelling without specifying time.

Quarantine for this disease seems to be a "hit or miss" affair. Children are excluded from school and patients generally restricted

in their freedom, but no where is there any inclination to look on mumps as a serious affliction. The actual fatality of this disease is, of course, very low, practically nil, but the possibility of serious complications would appear to be sufficient cause for including it in modified quarantine or isolation. We may have some hope of solving this problem also, as Dr. Woolstein and others are at work on the subject and even small results give indication of ultimate success.

DR. W. A. SAWYER, California: I was rather surprised not to hear in Dr. Dalton's paper a more detailed discussion of the length of the period of infectivity in measles. There seems to be an increasing amount of testimony that a minimum isolation period of fourteen days is longer than is justified by the evidence. One of our health officers, Mr. H. F. Gray, of Palo Alto, made a careful epidemiological study, which seemed to corroborate the laboratory evidence, which tends to show that measles is probably not infectious after the fifth day after eruption. If this is the case, I think we should shorten the standard period of minimum quarantine, which is now fourteen days. It is my intention, if the change is justified, to shorten the isolation period which we are advocating in California. I should like to hear evidence on this point.

DR. J. W. KERR, United States Public Health Service: Our work related more particularly to the period of infection before the appearance of the rash, and I was under the impression that the time should be very much shortened from fourteen days. However, I am not familiar with any recent epidemiological observation of measles.

DR. G. T. SWARTS, Rhode Island: I understood from the Public Health Reports that the period of incubation was three days, and that the infective stage continued for three days afterwards. This seemed a rather short length of time to quarantine, and I was rather chary of adopting it.

DR. E. G. WILLIAMS, Virginia: My understanding was that measles is infectious for four days before the eruption appears and from five to six days afterwards. So we have adopted twelve days as the quarantine period, to give plenty of time.

DR. KERR: I think Dr. Anderson's results were that the disease is infectious before the eruption, and usually for not more

than forty-eight hours afterwards, and that the scales do not carry the contagion. The period of quarantine has been determined from the date of the eruption and has been about twenty-one days.

Dr. Charles H. Lerrigo, Kansas: The doctors in active practice constantly find that measles is spread through a whole school by the child who goes to school before the attack. We continually have persons in whose homes the child comes through a case of measles without there being any official admission of the fact. The child is passed off as having a bad cold, and he goes back to school almost as soon as the attack is over. My experience, and I think the experience of physicians in active practice generally, is that these are not the dangerous cases, but the child who has the catarrhal condition while in school.

Dr. John T. Black, Connecticut: I would like to ask what per cent of cases of whooping cough are generally reported, and if, as in Connecticut, but twenty-five per cent are reported, what steps are deemed advisable. In one city we have had the "individual" quarantine for five years, by the yellow band method, and this has increased reporting, as about seventy-five per cent of the cases are now reported. That leaves, of course, twenty-five per cent free. With this arrangement there is provision for an absolute "premises" quarantine for those who abuse the yellow band privilege. What I want to know is whether the yellow band privilege does not answer as well where the reporting of cases is not done by physicians.

Dr. Williams: We have a new regulation in Virginia in regard to whooping cough, which is that no case of whooping cough shall go or be brought nearer than thirty feet to one who has not had it, and that cases of whooping cough must wear a yellow band on the left arm. It is very desirable that the patients should get fresh air and not be confined to the house, so we fix this distance and provide that they must wear this yellow band.

I have found it very interesting in talking at the schools to illustrate the relative contagiousness of the diseases by calling for the holding up of hands of those who have had the diseases. I explain that measles and whooping cough are the most con-

tagious, because the germs are shot out into the air by coughing and sneezing; therefore more people catch the germs. In diphtheria and scarlet fever the patients do not usually cough or sneeze, and so the germs must be mechanically carried. By holding up of hands it will be found that 60 to 90 per cent of the children, according to the age, will have had measles and whooping cough. These two diseases being carried the same way, the number of victims is about the same. From 6 to 10 per cent will usually have had diphtheria or scarlet fever; the victims of these two diseases also being about the same. This demonstration following the explanation of the transmission of the germs usually makes considerable impression on the children.

Our hope in preventing measles and whooping cough and grippe is in inculcating the simple habits of covering the mouth and nose or turning the face downward when coughing or sneezing.

DR. JAMES S. BOYERS, Indiana: The question comes up very frequently in the practice of medicine, How soon after attending a case of scarlet fever is it reasonably safe to attend a maternity case? I have been in the habit of using every precaution, as wearing a long linen coat and a cap and handling the patient as little and as quickly as possible, and on returning to my office spray my nose and throat and take a bath and change my clothing. I should like to know the sense of this Conference on this point.

DR. W. A. SAWYER, California: The greatest difficulty in the administration of the quarantine of diphtheria does not lie in the enforcement of the simple rule to get two negative cultures before release, but rather in making proper provisions for the many persons who remain carriers for months and should not be indefinitely quarantined. We have taken the bull by the horns in California by providing that no health officer shall keep premises under complete quarantine for diphtheria for more than a month without making recommendations to the State Board of Health regarding conditions under which the carrier may be given partial freedom. The State Board of Health declared that a person who has been entirely well for thirty days or more and still harbors diphtheria bacilli is a carrier, and provided

special rules for carriers. These rules do not require complete quarantine of the premises. As soon as the thirty days is up a person ceases to be a diphtheria patient and becomes a carrier. The health officer is required to consider the case at that time with a view to terminating the house quarantine, if it can be safely done. Our trouble now comes from health officers who are not attending to their duty in this respect and are blindly carrying out the former rule and are quarantining cases indefinitely and often unnecessarily.

Dr. Dalton: We are all practically agreed that the quarantine period for measles should be comparatively short, because the infection seems to be shortlived. I have tried to give the majority opinion, which seems to be fourteen days. Of course, if you make it twelve days, that would probably do, but I think it would be well to wait until we have more definite information, and then make the change advisedly and permanently.

As to the percentage of cases of whooping cough that are reported, I do not know about that. It appears to me that if you get twenty-five or fifty per cent of the affected children wearing yellow bands, you would scarcely make up for the damage entailed by letting down the quarantine. I believe there should be strict quarantine during the infective period of whooping cough, with some provision for letting the patients get fresh air. As soon as you let the children loose, they go anywhere and everywhere, whether they wear yellow bands or not.

Of course, in the matter of scarlet fever, we are pretty well agreed that the infection is in the nasal and buccal secretions. If the throat and nose are well sprayed and fresh clothing provided, I do not see why, under ordinary circumstances, you should not be all right.

As to diphtheria carriers, I believe every case which is of more than a month's duration is a case for the State Board of Health to take up individually. It is a matter on which we are not in agreement at all. I know some States have tried the virulence test. There are not very many cases of that kind, of course, and I think that each one should be reported to the State Board of Health and dealt with individually.

WHAT CAN BE DONE THROUGH THE SCHOOLS IN THE PREVENTION OF THE COMMUNICABLE DISEASES

DR. L. R. WILLIAMS, New York

Communicable diseases are essentially diseases of childhood and the child is far more susceptible than the adult, except in those unusual cases where a disease has been introduced into a community for the first time.

The transmissibility of these diseases is increased on account of the much more intimate contact that occurs between children than between adults. In children of school age communicable diseases are most frequent and for a number of years steps have been taken to control outbreaks of communicable diseases in schools by various methods. There are several fundamental principles in the control of communicable diseases and our ideas of these fundamental principles have been somewhat changed during the past decade.

Twenty years ago even in the most advanced communities the chief fundamental principles were quarantine and terminal fumigation and added to these, if the communicable disease occurred among school children, was the closing of the school and the fumigation of the school rooms or school house.

Our increasing knowledge of communicable diseases has led us to modify these principles to a certain extent, and now it is believed that the most important feature consists not only in the isolation or quarantine of the sick, but also the control of the exposed persons—technically spoken of as *the control of the contacts.*

Many of the older sanitarians, especially in the smaller cities and rural sections, have not yet become convinced of the importance of the modern idea of the control of communicable diseases. Even though the fundamental principles be accepted as correct the failure to control outbreaks of communicable disease lies in an ignorance of the proper methods to be employed or inability to provide the method or funds to carry out the method if it be definitely known.

It would be most useful if the various methods to be employed could be simplified and put into terse language so that it would be within the reach of every health officer. Unfortunately, in most communities of any size the health officer cannot carry out the method singlehanded, and he must needs have adequate assistance. This assistance is often hard to obtain, as it means coöperation between education and health authorities, common councils and boards of estimate of cities, or any other authoritative financial body. The work that has been done by Chesley in Minnesota deserves special commendation and his method of obtaining the complete card index record of all school children and the list of diseases which each child has had is invaluable in saving additional days for the school child.

The first step in the control of communicable disease in schools

consists of the prompt exclusion from school of every child presumably affected with one of those diseases. This responsibility must lie with the parents or guardians of the child or with the school principal or teacher. The most feasible method consists in relying upon the teacher to exclude all children from school or at least to isolate in the schoolhouse any child who is apparently ill with fever, cold in the head or cough, until it is proven that such child is not affected with a communicable disease.

This sounds simple, but in order to obtain its accomplishment it is necessary to educate school superintendents, principals and teachers in methods of diagnosis, and here we have an immediate complication of authority between the health and education authorities. In the State of New York the Education Law requires the appointment of a medical school inspector for each school district and the State Commissioner of Education is charged with the duty of enforcing the law.

In the larger cities the work, as one might expect, is fairly well organized and administered, but in the smaller communities and rural districts school inspection is actually spoken of as a farce.

The health officers of the various municipalities are under the supervision of the State Health Department and they are somewhat jealous of the work of the medical school inspector employed by the education authorities. As a matter of fact, out of 1,444 municipalities in which there are 1,100 health officers, there are 800 health officers who are also acting as medical school inspectors in the employ of the education authorities. This is referred to in order to show that it is not a simple matter for the supervising health authorities to educate school teachers in another department. An attempt has been made which promises to be successful, owing to the hearty coöperation between the heads of the two great State Departments, and a pamphlet has been written entitled "The Teacher and Communicable Disease." This pamphlet gives in simple language the early symptoms of communicable disease. A table has also been prepared which it is hoped will be posted on the bulletin board in every schoolhouse in the State, giving the onset symptoms, the period of isolation, what children may be allowed at school, what immunes may go to school, and all the various detailed rules in regard to isolation and exclusion from school which are so confusing when one is not dealing with the situation every day.

The ideal method, perhaps, would be to have the medical school inspector or health officer visit the schoolhouse every morning and inspect all children in school in order to detect any child that may be ill and to see that the child is excluded from school. The method is perhaps worked out in detail in the city of New York better than in any other city in the State. All children who appear ill are removed from the classroom early in the morning by the teacher and remain in a separate room until they are seen by the nurse, who

visits every morning. The child's temperature is taken, and if it has a fever or shows any suspicious symptoms the child is sent home. The case is reported to the Health Department and an inspector is sent to the home of the child. and if it is found that the child is not suffering from a communicable disease it is given a return card and returns to school the following day, unless other illness prevents. This occasions the loss of only one day from school.

Throughout the rest of the State the Education Law provides that when a child is excluded from school on account of a disease presumably communicable the teacher or the principal must give the child a card notifying the health officer that the child is suspected of having a communicable disease.

Before returning to school the Education Law provides that the return card shall be signed by the family physician, school medical officer or health officer. This feature of the law does not seem to the Health Department entirely adequate, for it permits the child to return to school upon a card signed by the family physician.

In a recent epidemic in one of the cities of the State an incident occurred which we believe to be a common one. A child was taken ill with severe cough and fever and the family physician was summoned. who made a diagnosis of measles. At the end of a week the father of the child called upon the physician and asked him to sign a return card for the child. The following day the child returned to school without fever but with a marked eruption of measles upon its face. Although the law was complied with the teacher overruled the law and excluded the child from school.

The method adopted, then, by the State Department of Health in New York State for the control of communicable diseases in the schools consists, First. in an effort to place in the hands of every school teacher a pamphlet on "The Teacher and Communicable Disease"; second. to post upon the bulletin board of each schoolhouse a chart giving the principal early signs and symptoms of the communicable diseases and the various rules for isolation and exclusion from school; third, to require the school medical inspector, or in his absence the school principal or teacher, to notify the health officer of every case of communicable disease which comes to his or her notice; fourth. to require the health officer to notify the school inspector of every case of communicable disease in any family in which there are children of school age.

In some of the cities this procedure is very well organized, the medical school inspector and the health officer telephoning to each other every morning in regard to the fresh cases of communicable disease which have occurred either in the school or in the city and not amongst the school children. When an outbreak of communicable disease occurs the health officer keeps in a small notebook a record of every case of communicable disease in a family in which

there is a child of school age and on the other hand the medical school inspector keeps a list of all the children who are absent from school and with the assistance of the attendance officer the public health nurse ascertains the reason for their absence. This is done either by the notebook system or else by having a card system. If the card system is used three sets of cards are used—one by the health officer to keep a record of the cases of communicable disease occurring in families in which there are school children: a second card to be kept by the medical school inspector giving the list of all absentees; and third, a return card which is presented by parents of the child when the child returns to school. As pointed out previously the Education Law provides that this last card may be signed by the family physician and when so signed that the child may return to school. As a matter of fact, what usually happens is that amongst many families the physician is not called at all, or is called only once and he makes a diagnosis. Several days or a week later the parent calls upon the physician with the card and asks the doctor to sign it and the doctor readily assents for a small fee, and the child returns to the school the next morning.

Another feature which is of great importance is to have distributed to the parents of the absent children, whether they have had a case of communicable disease reported from that family or not, a slip giving directions to parents and guardians of the importance of reporting the communicable diseases and what diseases are required by law to be reported to the local health officer, with an attached slip which the parent is to sign, giving the name and address of the school child and making a cross opposite the diseases which the child may have had. In this way a list is obtained of all immune children who are absent from school.

By following out carefully the above described method it is possible to ferret out a large number of cases of communicable disease that have not been reported to the health authorities. Children are more promptly excluded from school and the number of school days lost is far less than by the old-fashioned method of closing the entire school.

A method which can be used to advantage in some high schools and in a few private schools is the system of partial exclusion. This is approved in the Rules and Regulations of the New York State Department of Health and provides that after exposure the contacts may return to school for a definite period. This has not been generally tried throughout the State because it takes a considerable amount of machinery and a good deal of intelligence to carry out satisfactorily. In a private school in which it has been tried in New York City it has been possible to add largely to the number of school days.

The plan was originally worked out by Freeman and his associates and is as follows: Whenever a case of communicable disease occurs

in the school the parents of every child in that class are notified of the occurrence of the case of communicable disease and given the date on which their child was exposed and the date of onset of the case, and the entire class continues to attend school for a varying number of days depending upon the nature of the disease, and then the entire class is excluded for a number of days which would well cover the date of onset if any of the class is likely to be affected with the communicable disease. In the meantime the parents and guardians of these children have had warning of the nature of the disease and are on their guard and keep their children under unusual observation. This system actually places the control of the contacts upon the parents and guardians and their family physicians and can only be carried out with their hearty coöperation.

Whatever method is tried it must consist not only in the prompt exclusion from school and the maintenance of quarantine, but also in the control of the contacts. The question of terminal fumigation is one which is constantly brought up and which modern experience deems less and less important. Fumigation is not required in New York State, but it is recommended that a thorough cleansing of the schoolroom in which the case occurred be carried out.

DR. W. S. RANKIN, North Carolina: I think the subject of this paper is too important a one to pass over without very thorough consideration. I am in hearty accord, and I suppose everyone else is, with the author of the paper on the general principle of the importance of the school as the distributing center for the communicable diseases, more particularly diphtheria, measles, scarlet fever, and whooping cough. While I dislike, especially after what Dr. Swarts has said, to refer to experiences in individual States, I do not see how we can discuss papers without referring to our own individual experience. I am worthless in a meeting of this kind unless I can tell what I have seen in North Carolina. That is all the health work of which I know, except what I have read, and what I have read the rest of you have read.

I want to say that in my State we have the following system for dealing with the school contagion proposition: In a county where the regulations are in force that are recommended to the counties for their adoption, a contagious disease—scarlet fever, diphtheria, or measles—is reported by the attending physician or by the householder, both of whom are required to report. The disease is reported according to the school district in which

it occurs. The health officer of the county requires the teacher of each school to file with him a disease census of her school. Here, we will say, is a school with forty-five pupils in it. If the teacher has filled out a blank form, which we supply, giving the name of every child and showing in the proper blank whether the child has had measles, she can very easily look at her chart and find out the susceptibility of her school to measles. The health officer knows the same thing. He can get out his card and find out the susceptibility of her school, and then he sends the teacher a letter and a set of rules which are to govern her in the conduct of her school during the existence of measles. There is nothing there about scarlet fever or diphtheria, and there is nothing about what the health officer should do or what the physician should do. This set of rules gives only the teacher's duty. If the disease is whooping cough, the teacher gets a set of rules for whooping cough, which are to govern her while this disease is present in her district. There is a separate set of rules for each disease. Another thing, the teacher receives pamphlets on measles which can be read in four or five minutes. This pamphlet tells how measles is carried, what its fatality is, etc. She takes that pamphlet and reads it to her school and explains it. Then she gives the school children copies of it to take home to their parents. So she uses the psychological moment when measles exists to arouse the interest of the children and of the parents. That is what we are doing in my State.

In Kansas they have what are called junior school health officers. There is in every school one of these, appointed by the county health officer. The county health officer furnishes each one with a report blank, on which he reports each month. He also furnishes a badge, a small one, which cost, I believe, six cents apiece. I believe the strategic place to strike these contagious diseases is in the schoolroom. I think that more depends on the teacher and possibly on these junior health officers than upon any other factor in the control of contagious diseases.

Dr. H. M. Bracken, Minnesota: Dr. Rankin says that these special rules are sent to the teacher after the disease appears. I think that is wrong. These rules should be in the hands of the teacher when she commences to teach, then when disease appears she ought to know what to do, or be able to get this knowledge

from the rules in her possession. If she waits until after the disease appears to get this information she will have a nice little problem on her hands.

The junior health officer seems to be a good idea. It is really education, and when you educate the people you are taking a step forward in the prevention of disease.

DR. JAMES S. BOYERS, Indiana: I am thoroughly of the opinion that the best thing to do is to exclude every child that comes to school with a cold, with any nasal discharge, sore throat, or coryza. I think if we could do this we would cut off a great percent of infection from these diseases.

DR. CHARLES H. LERRIGO, Kansas: I think this idea of which Dr. Rankin spoke, about sending the people special notice at the time the case occurs, is of very great value for one particular reason. I take it that Dr. Rankin's teacher is already generally informed as to what she should do. This notice which she gets from the county health officer gives her, I suppose, specific directions as to what she must do. You can imagine what excitement there would be if a teacher should say that every child who came to school with a running nose or a sore throat must go home. When the teacher gets specific information from the health officer, she knows what to do.

DR. E. G. WILLIAMS, Virginia: I think that the school should be looked upon as the safest place in the community, and the greatest factor for preventing diseases in the community. The old idea was that the school is the place where diseases were disseminated; the idea prevailed that a contagious case was like a hornet's nest, with germs flying around in all directions, but we know now that is not so. The child cannot have diphtheria unless it puts the germs in the mouth, nor can it have measles unless it gets into the mouth or nose the secretions containing the germs usually coughed or sneezed into the air by another child. Now-a-days children and even teachers may be seen in the schools putting into their mouths their fingers, pencils, etc., and coughing or sneezing without an effort to protect others. Such actions should be looked upon as serious violations of the rules of the school, and demerits given accordingly. These dangerous practices or habits will have to be stopped before we can

expect to prevent the common contagious diseases of childhood. Quarantine alone will not prevent them. The teachers can do more good in preventing sickness than all the health officers combined.

Dr. John A. Smith, New York: In regard to Dr. Rankin's criticism, I think that holds in that it is important to drive home to the teacher, upon the occurrence of an outbreak, the facts relative to the particular disease which you have under consideration.

During a recent epidemic in one of the villages in my sanitary district in New York State I addressed a meeting of the teachers and school principals, urging upon them the importance of the teachers being familiar with the pamphlet issued by our State Department of Health on the subject of "The Teacher and Communicable Disease." One of the principals present said that the teachers would not read the pamphlet, whereupon I questioned the teachers present as to how many had read it and were familiar with the beginning symptoms of the disease epidemic. To my great satisfaction I found the majority had not only read the pamphlet but were familiar with its contents.

The idea is that we want our teachers to be familiar with the chart contained in the pamphlet, on "Rules for the isolation and exclusion of pupils from school for communicable diseases." They will then be able to recognize the first case and make suitable disposition of the same.

You *do* get severe criticism when you exclude children from school for "colds" or running noses during an outbreak of measles. I find that this can be largely obviated by the use of an exclusion card which we require, thus informing the parent or guardian *why* the child is excluded and *how* it may return.

During an epidemic the coöperation of health and educational authorities is fundamental. A joint meeting of the boards of education and health should be called together with the teachers, health officer, medical inspectors, and, if possible, a representative from the local paper. Have something published in the local paper (if you have one) in regard to your proposed method of control of the outbreak, so that the public will know what you are trying to accomplish. The parents or guardian of every child excluded from school should always receive the notification card already referred to. This conveys not only the

information to the parent or guardian as to why the child has been excluded, but also states that the child may return to school by presenting a certificate from either the family physician, health officer, or medical inspector, stating that the child is no longer capable of transmitting infective material. By furnishing the services of the medical inspector or health officer free to parents, you take care of their allegation that they are not obliged to pay their family doctor for examining children to learn if they are in fit condition to return to school.

In an epidemic especial attention should be paid to the non-immune children; those of the same family, where a case develops, should be excluded from school, while all non-immunes in school should have their temperatures taken daily and excluded if a temperature above 99.5 exists. This is of especial importance in an outbreak of measles. The invaded households are visited by a nurse regularly to learn if quarantine is being observed.

The question of the advisability of juvenile health officers being appointed in each schoolroom is one which can be answered in the affirmative. It is a most excellent idea, and should be more widely applied.

There is no better place than the schoolroom for inculcating a hygienic consciousness among children and for teaching them how to avoid disease.

DIFFERENCES IN METHOD OF CONTROL OF COMMUNICABLE DISEASES IN URBAN AND RURAL COMMUNITIES

DR. JOHN S. FULTON, Maryland

Such differences as there are in the method of control of communicable diseases in urban and rural communities, I presume, depend upon other things than the inherent nature of the diseases to be considered. I presume that when we speak of urban communities we mean organized communities having some form of government. I do not presume we would draw the line at a population of 2,500. By rural I suppose we mean those rural in a pretty literal sense, by occupation and distance between homes. The only essential difference would grow out of the naturally greater interval of time required for the various processes of infection, inspection, isolation, and disinfection. Differences on other accounts I think are not important enough for us to really discuss. It would be scarcely profitable to go through the list of all the diseases we would have to consider. It might be if I had something important to say on each of them.

These differences of which I speak are disadvantages, of course. It takes longer to get to the spot. The time for infection is longer. There are greater distances to cover, which means, of course, that the speed of transmission is a good deal lower than under urban conditions. These are all disadvantages in checking communicable diseases under rural conditions. I can think of only one advantage which the health officer has, and that is the more intimate nature of al procedures carried out under rural conditions. Take, for instance, typhoid fever. It affords to the health officer a contact with the family, and usually with the neighborhood, closer than is found in the city in similar practice. Methods of isolation are different, certainly, in populations less in size than those able to maintain separate hospitals. School hygiene is not, in any important sense, different from what it is in the city. Immunizations are practically just as easily done under rural conditions as under urban conditions.

There is one difference which I think should be noted, and that is one's sense of magnitude of epidemics under rural conditions. It is not possible to see, under urban conditions, a truly large epidemic of measles. The one place to see a real epidemic of measles is under rural conditions. Where you have a population of thousands, three, four, or perhaps five hundred cases do not constitute an epidemic. What I consider the only epidemic of measles I ever saw was in a rural part of Maryland. I saw 200 cases of measles in a population scattered over an area six or seven miles square. That was an epidemic of great magnitude. When we come to compare the magnitude of epidemics under urban and rural conditions, we speak of such small numbers that, if transferred to cities, would make epidemics of such magnitude as for us to have had no experience.

There is particular danger in typhoid fever. It has no dramatic feature at all, because the epidemics are house epidemics. I think the magnitudes of typhoid fever epidemics are in inverse ratio to population, beginning with the largest cities.

I do not think the remarks I have made are very pregnant of discussion or that they will arouse people's minds very much, but this is the end of my data on this subject.

Dr. A. J. Chesley, Minnesota: As Dr. Fulton has pointed out, there are important distinctions between the control of diseases in rural and in urban districts, but the consolidated school is bringing the rural community, to some degree, into the class of the urban community.

Record of residence of pupils by sanitary districts is important for the follow-up of those exposed to infection. In Minnesota the pupils' disease census cards, filed in the schools, are of great aid, especially in rural districts where the township super-

visors constitute the Board of Health and the Medical Health Officer receives his instructions to investigate through the Chairman of the Board of Supervisors.

The consolidated school, in relation to the control of disease, presents a different problem from that of the isolated rural school.

DR. T. D. TUTTLE, Washington: I believe that Dr. Fulton said he had never seen an epidemic in a city. I wish he had been in Spokane, where we had 1,146 cases of measles in one month this year.

DR. W. W. GOLDEN, West Virginia: There is certainly some difference in the method of controlling these diseases under rural and urban conditions. I will mention one or two. There is greater difficulty in controlling these diseases under rural conditions, partly because of lack of centralization, though perhaps the school may act as a center. Take, for instance, the matter of dairy products. In a large city you can register and keep track of the dairies, but you cannot do it in a small town, because for the same population, proportionately, there may be twenty times as many sources of milk supply. It is impossible to look after each source of supply in order to check the spread of disease. Consider, again, the matter of water supply. If you suspect contamination of the water supply of a city, it is a comparatively simple matter to control that; but take the farming communities, each family having its own source of water supply, and it is a much more difficult problem to look after. So, certainly, there is a very marked difference in the control of these diseases under these different conditions, because the sources of dissemination are not so centered as in the urban communities.

DR. E. G. WILLIAMS, Virginia: I should like to ask if you can explain why the cases of diphtheria should be at the minimum in June and the maximum in October, with apparently a larger number of cases in the rural and suburban sections than in the large towns and cities. Is there anything floating about in the air which would aid the germ and make it more virulent? According to the statistics in Virginia, from the minimum in June, the number of cases rises through July, August and September, and reaches the maximum in October.

Dr. E. R. Kelley, Massachusetts: In Massachusetts we get the maximum in October and November. The minimum is in June and July.

Dr. Fulton: In our State we have kept the records carefully for six years. The lowest is in June. It rises a little in July, more in August, and reaches the maximum in September and October. I do not know the reason.

BEST METHOD OF DISINFECTION AFTER TUBERCULOSIS, WHOOPING COUGH, TYPHOID FEVER, SCARLET FEVER, MEASLES, DIPHTHERIA AND SMALLPOX

Dr. A. J. Chesley, Minnesota

Note the word "after." It limits the discussion to three groups of cases. Group 1: The patients have fully recovered and have been released from all restrictions in accordance with Board of Health regulations. Those restrictions have been discussed here in previous papers.

Group 2: The patients have been removed during the course of the disease.

Group 3: The patients have died.

It is seen that strictly terminal disinfection of the premises is all that the title covers. Mediate disinfection and the attention paid to the patient before release from quarantine are not to be here considered.

Tuberculosis may be disregarded in relation to Group 1. Only cases of tuberculosis of the lungs or air passages need be considered at all.

Group 2 will include few, if any, rural cases of the acute infectious diseases, except typhoid fever, because hospital facilities are seldom available outside of cities.

Tuberculosis has first consideration in Group 2 and also in Group 3. Families with young children often occupy premises from which living "open" cases of tuberculosis have been removed, and tuberculosis as a cause of death is more important than all the other mentioned diseases combined. Laboratory experiments prove that old, dried sputum often contains tubercle bacilli which will produce active lesions in guinea pigs. Creeping infants and young children constantly put their hands and all sorts of things into their mouths. Children occupying rooms vacated by a tuberculosis patient might be infected in this manner, but the very nature of tuberculosis makes it practically impossible to trace exactly where and when and how infection takes place. The public should have the benefit of the

doubt. The bed-room and living room used by the "open" case of tuberculosis should always be thoroughly scrubbed and aired out. Things used by the patient or about his rooms, if washable, may be cleaned with hot soap-suds and by boiling. If not washable, exposure to direct sunshine for hours on successive days, together with the removal of the visible sputum spots, should remove practically all danger.

A *best method*, if there is such a thing, must be a simple one, easily carried out by the average individual, relatively inexpensive, and applied with *uncommon good sense* and judgment, according to the conditions in the case. At times chemical disinfectants may be used to advantage. Renovation of premises vacated by the tuberculous, repainting, repapering, or kalsomining should always be considered. Although such work adds to the expense, as a general precaution it is worth while.

Disinfectants, physical and chemical, and methods of use are covered in the appendix to the report of the Surgeon-General's Conference of 1915. To the list given there should be added the new Hygienic Laboratory Pine-oil Disinfectant The practical use of disinfectants and reasons for use were described by Dr. H. E. Hasseltine, of the Hygienic Laboratory, in his paper read before this conference last year.

In typhoid fever, whether the case is fully recovered or has been removed from the premises for treatment elsewhere, or has died on the premises, thought must be given to the disposal of the discharges during the course of the disease. If discharges were deposited in a privy vault we should make sure that flies cannot have access to them and that a generous quantity of freshly prepared milk of lime is used for disinfection of the contents of the privy. The parts of the privy liable to contamination by hands or in any other way should be thoroughly scrubbed. If the patient has recovered, anyone who may handle vessels used for his discharges should be cautioned about the danger and told how to clean and disinfect the hands as well as the vessel. Precautions of this nature should include handling of the patient's towels and body linen, etc., since every typhoid convalescent is a "carrier" for some time. Rarely is sufficient attention given to mediate disinfection. Therefore, it may be assumed that the rooms occupied by patients (Groups 2 and 3) contain infectious material and require terminal disinfection. In every case the circumstances must be considered and common sense used, as well as common soap and water and any standard chemical disinfectant one may choose.

In regard to Group 1 cases, *if* terminal disinfection *is* necessary, it must be assumed that the infectious agent contained in the discharges of the patient will live longer in an environment unsuited to it than in the patient's body (disregarding tuberculosis and excluding typhoid fever from consideration in Group 1). There is no objection to renovation and thorough cleaning of rooms after the

patient is fully recovered from whooping cough, scarlet fever, measles, diphtheria, or smallpox, but comprehensive studies made in Providence, New York City, Rochester, and elsewhere, indicate that very little can be credited to terminal disinfection of Group 1 cases in the prevention of secondaries in diphtheria and scarlet fever. The time required before release of restraint in whooping cough and measles is ample for protection, and disinfection is entirely useless in Group 1 cases of these diseases.

In diphtheria, where repeated negative nose and throat cultures are required before release of quarantine, and in scarlet fever and smallpox, where all evidence of sore throat or nose and throat discharge and active lesions must have disappeared before release of quarantine, it does not seem reasonable that things in the rooms, contaminated with discharges while they were infectious, can still be dangerous. Then why fumigate the air of the apartment? Why call whatever renovation and cleaning of the premises is considered advisable under the circumstances "terminal disinfection?" Scarlet fever desquamation and scabs and crusts from skin lesions of smallpox may be given as a reason. Except as flakes of skin may carry nose and throat discharges from scarlet fever cases, they have no relation to the spread of the disease in the opinion of many careful observers. Flakes of skin soiled with infectious discharges have time to become non-infectious through drying while the patient's mucous membrane is returning to its normal condition. If ear discharge is present it is easily cared for and should not necessitate disinfection of the premises.

Smallpox scabs retain infectivity a long time. Possibly some unvaccinated person might acquire immunity through their agency. If the victim be an anti-vaccinationist, why deprive ourselves of amusement and the unvaccinated public of the removal of this menace by preventing a "black sheep" from thus joining the immune band?

The title of this paper would not cover discussion of chronic "carriers" of typhoid bacilli, nor virulent diphtheria bacilli, although such persons deserve some consideration as reservoirs of infection, the danger from which cannot be overcome by terminal disinfection except in a crematory. The use of hexamethylenamin should remove the danger from the bladder discharges of a typhoid "carrier." The removal of the tonsils frequently is followed up by a clearing up of the infection in the chronic "carrier" of virulent diphtheria bacilli. Certainly no one advocates continuous disinfection of the premises where "carriers" live, but everyone considers that suitable attention to the infectious discharges themselves and avoidance of certain occupations and associations is sufficient to safeguard the public.

The expense, the incompetence in execution, the impracticability in many cases of carrying out any method thoroughly except the mechanical cleaning, reinforce the real point of the question, *i. e.*,

what does so-called terminal disinfection accomplish as ordinarily done? I believe that sooner or later all practical public-health workers will agree with Chapin on the subject of terminal disinfection.

To sum up: I do not know the *best* method of terminal disinfection. *Common soap used with uncommon sense*, sunshine, fresh air, and, occasionally, some standard chemical disinfectant, is the nearest approach to a definition that I can give.

DR. JOHN L. BURKART, Michigan: I have listened with great interest to the papers read. Particular interest is centered in the last one, "The Best Method of Disinfection after Tuberculosis." It seems essential that our efforts be directed to disinfection during the progress of the disease, rather than after termination by death or recovery. This same duty seems imperative in all other dangerous communicable diseases, and if this policy is pursued diligently by health officers we may expect a great decrease in the number of cases. Terminal disinfection as ordinarily practiced by the rural boards of health is of very little value.

I have seen some very disastrous results of inefficient disinfection in scarlet fever, and can cite some almost incredible instances of transmission of the disease by infected articles many months after the close of the active cases. In one instance a house which had harbored several cases of scarlet fever was vacated and remained uninhabited for ten months. A family consisting of parents and one child moved in, found a lot of soiled clothing and "rags" therein. Shortly after the occupation of the house the child, who had not been exposed by any other method, acquired scarlet fever and died. Suit was contemplated against the local health officer, but was not prosecuted. Tanner, of London, cites an instance where a disease was contracted three years after the close of an active case by means of contaminated clothing which seemed too valuable to destroy and was packed in a trunk without proper disinfection. Schick of Vienna records a case of undoubted infection from a valuable set of furs which the patient had worn and played with before death. Sentiment prompted the parents to save the garments and they were packed away in a trunk, two years afterward unpacked and given to a grandchild, with the disastrous results noted.

The necessity of destroying all possible sources of infection and the value of sunlight, fresh air, and precautionary measures

during the progress of all the communicable diseases should be impressed upon the public, as the practice will decrease the spread of all communicable diseases.

Dr. G. T. Swarts, Rhode Island: I think the question of fumigation has passed into the dark ages now, and that it is not necessary for us to discuss it. I think it has been established that sulphur is of no value; and that formaldehyde is all right if you can catch the germs and push it down their throats. Often by creating a stench you have given a false sense of security. I agree with the readers that a good housecleaning will accomplish more than all the fumigation that can be done. It is not necessary to go to extremes. If simply done and easily done it will gain the confidence of the family and will produce some results.

I do not think it is necessary to remove the paper on the wall in scarlet fever and diphtheria; but in consumption it is possible that where the patient has been in the room for a long time the paper may be infected.

Dr. W. C. Woodward, District of Columbia: I hope Dr. Chesley, when he closes the discussion, will tell us how he finds out when the discharges from the nose and throat of scarlet fever patients are no longer dangerous.

There is one question, too, in respect to terminal disinfection I would like to ask: Which of the health officers present, having had his own child sick in bed with scarlet fever, would allow a second susceptible child to use that same bed and that same pillow without terminal disinfection?

Dr. Kerr, U. S. P. H. S.: I would suggest that this Conference take up the study of terminal disinfection by means of questionnaires and epidemiological observations, and that we, as health officers, reach some practical conclusions on this question, which confronts us all. As Federal health officers, our work relates particularly to vessels, and we can there, perhaps better than in houses, assure ourselves that methods that are in general practice will be effective. I would like to suggest that, as part of the program for next year, the subject of terminal disinfection be taken up, and that meanwhile everybody secure as much information and data as he can.

Upon motion of Dr. W. C. Woodward, which was carried, the chairman was instructed to appoint a committee to investigate and report on terminal disinfection in all its aspects.

DR. CHESLEY: In rural work the conditions are quite different from those in the District of Columbia. I tried to emphasize that whatever is done as terminal disinfection must be done with *uncommon* sense. That applies in any State as much as in the District of Columbia.

Dr. Tuttle asks, When are the nose and throat discharges no longer dangerous? Positive answer is postponed until next meeting.

Fresh air, sunlight, etc., have been mentioned. All go with the general cleaning up as a part of the common-sense program. No one disputes Dr. Tuttle's contention about the consumptive's pillow, sheets, etc., but people are supposed to be ordinarily decent and clean.

There is much to be found out about scarlet fever. Next year, when your committee reports, if we all keep track as far as we can of our epidemiological observations, there should be facts to act upon. In Minnesota every case of diphtheria and scarlet fever is followed up and the precautions taken before release of quarantine are noted. When a gaseous disinfectant is desired, we recommend formaldehyde.

REPORT OF THE AUDITING COMMITTEE

The Auditing Committee reported that it had examined the books and accounts of the Treasurer, and found them to be correct.

REPORT OF COMMITTEE ON NOMINATIONS

For President: Dr. T. D. Tuttle, Washington.

For Vice-President: Dr. S. L. Jepson, West Virginia.

Secretary-Treasurer: Dr. E. R. Kelley, Massachusetts.

Executive Committee: Dr. A. G. Young, Maine; Dr. John W. S. McCullough, Ontario, Canada; Dr. John L. Burkart, Michigan.

The report of the committee was received and the officers named were elected.

REPORT OF COMMITTEE ON RESOLUTIONS

Whereas, This Conference has been deprived of the benefit of the counsels of our esteemed past President, Dr. S. J. Crumbine, by the recent death, under peculiarly distressing circumstances, of his only son, be it therefore

Resolved, That the Thirty-first Annual Conference of the State and Provincial Boards of Health of North America express hereby their deep-felt sympathy for him and his family in their bereavement, and that a copy of this resolution be telegraphed by the Secretary to Dr. Crumbine, and be spread upon the minutes of the meeting.

Resolved, That this Conference records its sense of loss in the death, on January 9, 1916, of Dr. Joseph H. Townsend, Secretary of the State Board of Health of Connecticut, and for twelve years a member of this Conference; and hereby instructs the Secretary to express the sympathy of the Conference to the members of Dr. Townsend's family, and to spread this resolution in the minutes of the Conference.

Resolved, That hereafter all committee reports shall be in writing.

The report of this committee was adopted.

REPORT OF COMMITTEE ON PUBLICITY

This committee had no report to make, except that the newspapers had been informed that the Conference was in session, and that the names of the new officers, etc., would be given to their reporters after the meeting adjourned.

After a vote of thanks to the President and to the outgoing Secretary-Treasurer for their able services, the Conference adjourned.

OFFICERS OF THE CONFERENCE, 1917

President—Dr. T. D. Tuttle, Washington.
Vice President—Dr. S. L. Jepson, West Virginia.
Secretary-Treasurer—Dr. E. R. Kelley, Massachusetts.

EXECUTIVE COMMITTEE

Dr. A. G. Young, Maine.
Dr. John W. S. McCullough, Ontario, Canada.
Dr. John L. Burkart, Michigan.

COMMITTEES

Conservation of Vision—Dr. Gardner T. Swarts, chairman; Dr. M. M. Seymour and Dr. J. C. Price.

Pellagra—Dr. James A. Hayne, chairman; Dr. H. L. Harris and Dr. Joseph Goldberger.

Sanitation of Common Carriers—Dr. E. R. Kelley, chairman; Dr. C. J. McGurren and Dr. John W. S. McCullough.

Model State, District, and County Health Laws—Dr. G. H. Sumner, chairman; Dr. S. J. Crumbine and Dr. Joseph Y. Porter.

Course of Study in Sanitation for Women's Clubs—Dr. S. J. Crumbine, chairman; Dr. Frederick R. Green and Mrs. W. A. Johnson.

Recent Advances in Sanitary Organization and Practice—Dr. John L. Buckart, chairman; Dr. A. J. Chesley.

Terminal Disinfection—To be appointed.

SECRETARIES OR EXECUTIVE OFFICERS, STATE AND PROVINCIAL BOARDS OF HEALTH OF CANADA AND UNITED STATES

CANADA

Dr. F. Montizambert, Director-General of Public Health, Ottawa, Ontario.

PROVINCES

Alberta—Dr. T. J. Norman, Provincial Medical Officer of Health, *pro tem.*, Edmonton.

British Columbia—

Manitoba—Dr. E. M. Wood, Secretary, Winnipeg.

New Brunswick—Dr. E. Bayard Fisher, Secretary, Fredericton.

Nova Scotia—Dr. W. H. Hattie, Provincial Health Officer, Halifax.

Ontario—Dr. John W. S. McCullough, Chief Officer of Health, Toronto.

Quebec—Dr. E. Pelletier, Secretary, Montreal.

Saskatchewan—Dr. M. M. Seymour, Commissioner of Public Health, Regina.

UNITED STATES

Dr. Rupert Blue, Surgeon General, U. S. Public Health Service, Washington, D. C.

STATES

Alabama—Dr. W. H. Sanders, State Health Officer, Montgomery.

Alaska—J. F. A. Strong, Governor, Commissioner of Health *ex officio*, Juneau.

Arizona—Dr. Robert N. Looney, Secretary, Phoenix.

Arkansas—Dr. C. W. Garrison, State Health Officer, Little Rock.

California—Dr. W. A. Sawyer, Secretary, Sacramento.

Canal Zone—Col. Chas. F. Mason, U. S. A., Balboa Heights.

Colorado—Dr. S. R. McKelvey, Secretary, Denver.

Connecticut—Dr. John T. Black, Secretary, Hartford.

Delaware—Dr. A. E. Frantz, Secretary, Wilmington.

District of Columbia—Dr. William C. Woodward, Health Officer, Washington.

Florida—Dr. Joseph Y. Porter, State Health Officer, Jacksonville.

Georgia—Dr. H. F. Harris, Secretary, Atlanta.

Hawaii—Dr. K. B. Porter, Secretary, Honolulu.

Idaho—Dr. Ralph Falk, Secretary, Boise.

Illinois—Dr. C. St. Clair Drake, Secretary, Springfield.

Indiana—Dr. J. N. Hurty, Secretary, Indianapolis.

Iowa—Dr. Guilford H. Sumner, Secretary, Des Moines.

Kansas—Dr. S. J. Crumbine, Secretary, Topeka.

Kentucky—Dr. A. T. McCormack, Secretary, Bowling Green.

Louisiana—Dr. William M. Perkins, Secretary, New Orleans.

Maine—Dr. A. G. Young, Secretary, Augusta.

Maryland—Dr. John S. Fulton, Secretary, Baltimore.

Massachusetts—Dr. Allan J. McLaughlin, Commissioner, Brookline.

Michigan—Dr. John L Burkart, Secretary, Lansing.

Minnesota—Dr. H. M. Bracken, Secretary, St. Paul.

Mississippi—Dr. J. D. Gilleylen, Secretary, Jackson.

Missouri—Dr. J. A. B. Adcock, Secretary, Jefferson City.

Montana—Dr. W. F. Cogswell, Secretary, Helena.

Nebraska—Dr. J. D. Case, Health Inspector, Lincoln.

Nevada—Dr. S. L. Lee, Secretary, Carson.

New Hampshire—Dr. Irving A. Watson, Secretary, Concord.

New Jersey—Dr. J. C. Price, Director, Trenton.

New Mexico—Dr. W. E. Kaser, Secretary, East Las Vegas.

New York—Dr. Hermann M. Biggs, Commissioner, Albany.

North Carolina—Dr. W. S. Rankin, Secretary, Raleigh.

North Dakota—Dr. C. J. McGurren, Secretary, Devil's Lake.

Ohio—Dr. E. F. McCampbell, Secretary, Columbus.

Oklahoma—Dr. John W. Duke, Commissioner, Guthrie

Oregon—Dr. David N. Roberg, Secretary, Portland.

Pennsylvania—Dr. Samuel G. Dixon, Commissioner, Harrisburg.

Philippine Islands—Dr. J. D. Long, Director, Manila.

Porto Rico—Dr. W. F. Lippitt, Director of Sanitation, San Juan.

Rhode Island—Dr. Gardner T. Swarts, Secretary, Providence.
South Carolina—Dr. James A. Hayne, Secretary, Columbia.
South Dakota—Dr. P. B. Jenkins, Secretary, Waubay.
Tennessee—Dr. R. Q. Lillard, Secretary, Nashville.
Texas—Dr. W. A. Davis, Secretary, Austin.
Utah—Dr. T. B. Beatty, Secretary, Salt Lake City.
Vermont—Dr. Charles F. Dalton, Secretary, Burlington.
Virginia—Dr. E. G. Williams, Commissioner, Richmond.
Washington—Dr. T. D. Tuttle, Commissioner, Seattle.
West Virginia—Dr. S. L. Jepson, Commissioner, Charleston.
Wisconsin—Dr. C. A. Harper, Secretary, Madison.
Wyoming—Dr. W. A. Wyman, Secretary, Cheyenne.

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